A FINANCIAL ANALYSIS ON MAJOR CONTRACTORS IN GREECE

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Andriani Avraam

ABSTRACT

This report, entitled 'A financial analysis on major contractors in Greece', describes the situation of major contracting companies (seventh class) in the country. To begin with, four companies are presented. Then financial data, including the composition of share capital, their turnover, net profit before taxes, total assets, shareholders' funds, debtors and short-term liabilities for the period 2001-2005, is analysed. Financial indicators, such as profit margin, return on shareholders' funds and return on capital employed are also used. Furthermore, all strategic choices of the companies for this period are examined. First, the wave of mergers of 2002 is interpreted and information on its results is provided. Second, the case of diversification of major contracting companies is explained, in terms of causes and consequences. Third, attempts of major contractors to work overseas are outlined. Finally, concessions are discussed; their extent in Greece and their effect on the companies' progress are stated. To conclude, general comments are made, concerning construction industry in general in Greece. All information on the companies is gathered either by secondary sources (newspapers, magazines, website) or mainly by interviewing senior executives of the four companies and is compared to literature review.

Keywords:
major contractors, financial analysis, merger, diversification, internationalisation, concessions

Word-count: 11410 words

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CHAPTER 1: INTRODUCTION

1.1 Identification of problem and problem owner

The construction industry is one of the most important and most promising industries of the Greek economy, closely related to the country's economic growth. The completion of the Second Community Support Framework (CSF), the realisation of the Third CSF as well as the potential of the Fourth CSF have significantly contributed not only to the development of the country but also to the prosperity of the industry.

Currently, the construction industry faces several challenges. After the boom due to the 2004 Athens Olympic Games, a period of recession emerged demanding changes. Among them are mergers and acquisitions, diversification, entering foreign markets and concessions.

The above-mentioned facts have certainly influenced all the companies, which belong to the construction industry. However, the problem is more tangible and distinct to the major contracting companies, the leading companies of the industry, because usually these companies have access and are allowed to take part in high-budget projects. To be more specific, contracting firms in Greece are divided by the Ministry of Environment, Physical Planning and Public Works into seven classes according to their capital and the experience of the executives, whom they employ. As is by law enacted (ch. 4), the higher the class of the contracting company is, the higher the budget of the public project for which it can bid. Consequently, mostly seventh class contracting companies suffer from the emerging conditions, which have been described above, as they are the ones involved with the largest projects across the country.

1.2 Research objective

The report aims to explore the situation prevailing in the Greek construction industry. The focus is on major contracting firms, namely those of seventh class, working on public sector projects. All risks and difficulties, which deplore major construction firms, are examined and potential ways to exit the deadlock are interpreted. Especially, numerical figures and financial ratios are extracted out of profit and loss accounts, cash flow statements and balance sheets of the companies in question, in order to evaluate the progress and growth of each company specifically and the sector in general during the last few years. The results of the quantitative analysis are expounded with the aid of qualitative analysis tools, that is to say information on the strategy of the companies, relative to mergers, diversification, internationalisation or concessions. Accordingly, construction majors in Greece and in any other country with similar conditions will be able to have a thorough and meticulous description of the factors affecting the routes of the sector, highlighting how important each one of them is.

1.3 Relation to theory and prior research

Ive (1994) has already written a similar study of the 'modern construction firm'. Ive (1994) isolates the eleven groups with the largest construction-related turnovers in the UK in 1989 and explains why these large firms have increased importance in this industry and why their growth has taken the particular form that it has. Three different approaches are the useful tools used to fill this vacuum of explanation, namely the managerial/ control, the financial/ risk reduction and the animal spirits/ boom condition explanations. Ive (1994) aims first to explore the forces making for certain ownership structures, second to explore the importance of ownership structure and third to consider the future of alternative ownership structures and to point out the alternatives to hypostatising a form of ownership that may be temporary and contingent. Thus, two sets of firms are identified as the dominant types of

construction majors: bisectoral conglomerates and diversified construction groups. The characteristics of the aforementioned types of firms are thoroughly examined and, then, contrasted with other forms of industrial ownership and corporate growth. Ive (1994) concludes by speculating future ownership scenarios, such as break-up of diversified construction groups, take over of diversified construction groups by non-construction-based groups or further mergers between construction majors.

Furthermore, several theses have been submitted to the Bartlett School of Graduate Studies concerning construction industry in Greece, some of which provide significant piece of work to be continued. For instance, Karli (2005) analyses four of the most important companies in Greece, emphasising on market diversification. Mathioulaki (2002) explores the business options Greek contractors are presented with, taking into account that the industrial boom in 2002 because of the expected 2004 Olympic Games is unlikely to be sustained in the long-run. Alexopoulos (1999) studies the growth and evolution of listed and unlisted construction firms. Lappa (1998) indicates the actual growth achieved by the Greek contractors, the capital expenditure in which they have proceeded to keep up growth, the sources of finance used and the restraints faced by the Greek companies.

1.4 Methodology

Oppenheim (1992) suggests that the need for an appropriate design arises whenever they wish to generalise from their findings, either in terms of the frequency or prevalence of particular attributes or variables or about the relationships between them. Therefore, the research goes through the following stages:

1. Deciding the aims of the study (which have been defined above).
2. Reviewing the relevant literature, including books and articles concerning the construction industry and major contractors in general and in Greece in particular. This stage included gathering data from secondary sources, namely gathering all financial accounts of the

major contractors in Greece through the website or other sources. At this point, also, relevant theories were investigated, such as mergers and acquisitions, diversification, internationalisation, concessions and understanding companies' financial accounts.

3. Designing the necessary research instruments and techniques. For this report, interviews are the most appropriate research instrument because they gather the following advantages versus questionnaires, according to Oppenheim (1992). First, interviews allow for numerous, open-ended questions, where the interviewer has to record verbatim the answers given by the respondents. Second, interviews provide an improved response rate. Third, an advantage in the use of interviews is that they can give a prepared explanation of the purpose of the study more convincingly than a covering letter. This last set of advantages is the most important one, the one imposing interviews instead of postal questionnaires, as in Greece people are not really used to such a mentality and special effort is needed in order to convince them to take part in a survey.
4. Doing the necessary pilot work, such as trying to gain access to the respondents and designing the questions. For instance, it is crucial not to violate one of the elementary rules of depth interviewing, namely to avoid asking questions that can be answered by a simple 'Yes' or 'No'.

13 MAJOR CONTRACTING COMPANIES IN GREECE	
1	J&P-AVAX
2	AEGEK
3	ATHINA
4	AKTOR
5	ALTE
6	ATTIKAT
7	VIOTER
8	EMPEDOS
9	THEMELIODOMI
10	MICHANIKI
11	MOCHLOS
12	PANTECHNIKI
13	TERNA

5. Designing the sample. This stage was very easy since in Greece there are thirteen major contractors of seventh class, as identified by the Association of Greek Contracting Companies (SATE) according to the law (ch.4). In other words, SATE has prepared this task; in fact, SATE provides certain lists where all companies are rated according to their qualifications. Yet,

only four of the thirteen were willing and able to answer the questions of the interview, while the rest only allowed the use of their financial accounts for the purpose of the study.

6. Selecting the people to be approached. The nature of the questions demanded people involved in higher management levels.
7. Doing the fieldwork, or rather the actual data collection process. The fieldwork stage is often shorter than the preliminary stages. Nevertheless, for this report it was more time-consuming than expected, since sometimes the people who were approached felt that others, maybe inferior to them but, certainly, experts on specific subjects, had to answer some of the questions.
8. Processing the data, coding the responses and preparing the data for analysis.
9. Assembling the results.
10. Writing the research reports.

Before the actual analysis, the names of the companies and the people who cooperated shall be mentioned, along with special thanks to them:

1. ELLINIKI TECHNODOMIKI TEB: Mr G. Sossidis, Managing Consultant, member of the Board of Directors
2. J&P-AVAX: Mr K. Pittaros, Managing Director of infrastructure projects
3. PANTECHNIKI: Mr E. Sarantopoulos, member of the Board of Directors
4. GEK: Mr P. Ioannidis, General Director of Northern Greece subsidiary

CHAPTER 2: BACKGROUND INFORMATION

2.1 Introduction

As it has already been stated, in order to describe the situation for major contracting companies in Greece, research and interviews have been conducted on a sample, consisting of four , most representative ones. The purpose of this chapter is to provide some background information on these four companies, before the final study.

It is worth mentioning at this point that Ive (1994), whose piece of work is a bright example, chooses the contractor majors to be studied by their turnover. To put it simply, the firms with the higher figures become the object of Ive's research. In this report, the major contractors are chosen through legal channels, which is a different criterion form Ive (1994). However, it is obvious and perhaps needless to say that contracting companies of the seventh class, which are involved with the largest projects, are the ones with the largest turnovers.

2.2 ELLINIKI TECHNODOMIKI TEB

ELLINIKI TECHNODOMIKI TEB (ELTEB) is a holding company with investments of long-term nature in four strategic fields. Traditionally, construction has been the group's main field of operations. The formation of the group started in 1998 and was completed in July 2002, when ELLINIKI TECHNODOMIKI (established in 1955 with main object of operation the private projects), TEB (established in 1949 with main object of operation the public projects) and AKTOR (established in 1970 with main object of operation the public projects) merged. The completion of this procedure resulted in the formation of the parent company of the group ELTEB (holding company) and the new AKTOR (construction company). The company

entered the Stock Market in 1994; noteworthy is the fact that a subsidiary company, REDS, has also entered the Stock Market. ELTEB currently employs 2781 people.

2.3 J&P-AVAX

The J&P-AVAX group of companies boasts substantial expertise and productive base as far as public works are concerned, as well as a considerable portfolio of concessions and subsidiary units with related activities. J&P-AVAX has evolved out of the merger of three of Greece's largest construction companies, AVAX, J&P-HELLAS and ETETH, which came about in two stages in 1999 and 2002. AVAX was founded in 1968 through the merger of the private enterprises of some of its current major shareholders, namely Nicholas Gerarhakis, Konstantine Kouvaras and Anthony Sgardelis and since 1994 is listed on the Athens bourse's main market. J&P HELLAS is the local construction arm of international group JOANNOU & PARASKEVAIDES and ETETH is a company based in Thessaloniki. J&P-AVAX currently employs 1074 people.

2.4 PANTECHNIKI

PANTECHNIKI is one of the leading construction companies in the country listed in the main market of the Athens Stock Exchange. PANTECHNIKI is active in both public and private construction projects. The group is also active in three relevant corporate sectors. The new PANTECHNIKI was formed when the former PANTECHNIKI and C.I.S. merged with the construction companies AIGEOPELAGITIKI ABENTE, DOKAT and YRIA. To be more specific, in 1960 the construction company ERGODOMI was founded, which was renamed to PANTECHNIKI in 1961. In 1979 the company C.I.S. was established. The former was listed in the Main Market of Athens Stock Exchange in 1999, whereas the latter was listed in 1994. The strategic merger of the two companies took place in 2002 under

the brand name of PANTECHNIKI. PANTECHNIKI currently employs 1074 people.

2.5 GEK

GEK is the parent company of a broader group of companies with a leading position in the field of construction, energy and real estate. GEK was incorporated in 1969, undertaking mainly construction projects for industrial buildings. In 1994 the company entered the Athens Stock Exchange. The transformation of GEK into a holding company was announced in 2002 and its construction sector was transferred to TERNA. GEK currently employs 848 people.

2.6 The case of THEMELIODOMI

The post-Olympic era has been very hard for contracting companies to survive. Not all of them have succeeded in this struggle for survival; few (2-3) among the thirteen 7^{th}–class contracting companies have gone bankrupt. Information on them and the conditions that lead to such an unfortunate fact cannot easily be accessed.

THEMELIODOMI is a characteristic example of contracting companies, which failed to break even under emerging conditions. NAFTEMPORIKI, a Greek financial newspaper, published in 9.8.2006 that the short-term liabilities of THEMELIODOMI, which have been terribly delayed, are 126 million EUROS and 139 million EUROS for the company and the group respectively. According to the article, Nikos Ekonomou, the managing director of the construction subsidiary of the group, declares that a foreign investment fund is interested in being the strategic investor of THEMELIODOMI by acquiring 30-40% of its share capital. Contacts and checks are taking place with a representative of the investor in Greece. The schedule has been changed since the creditor Banks transferred the date for fixing the debts from 15 July to 15 September. It is also specified that for the company to work properly

again they should immediately pay debts of 20 million EUROS to the State, the employees and other organisations.

2.7 Conclusion

The four companies in question have been briefly outlined in terms of significant facts and milestones. When they were founded and listed in the Stock Market, how and when they have taken the form they have today and the number of people they employ have been indicated. The following chapters examine in depth their financial statements and their strategic movements.

CHAPTER 3: FINANCIAL ANALYSIS

3.1 Introduction

As the report is entitled 'A financial analysis on major contractors in Greece', it is obvious that the four companies of the sample are under financial analysis. Therefore, several financial indicators are extracted from their accounts in order to be further studied and discussed. Before the actual analysis of the financial data, several terms are defined and the reasons why these specific figures have been chosen are noted.

To start with, talking about accounting in Greece is the same as talking about the two accounts, which each company is obliged to publicise: the balance sheet and the profit and loss account (income statement). In brief, a balance sheet is a financial statement, which describes the financial situation of the company at a particular date (Naoum, 1994); it is a statement of the assets, liabilities and shareholders' funds of the company at a particular date (Parker, 1999). The profit and loss account (income statement) is a financial statement, which describes the results of the company's activity for a particular period (Naoum, 1994); it is a statement of the revenue, expenses and profit of a company for a particular period (Parker, 1999). It demonstrates, from the point of view of the shareholders, the results of the year's activities. Turnover, profit (profit and loss account) and total assets, shareholders' funds, debtors, current liabilities (balance sheet) are further analysed.

Turnover is equal to sales, that is the amounts derived from the provision of goods and services falling within a company's ordinary activities after deduction of trade discounts, VAT and similar taxes (Parker, 1999).

Gross profit is the excess of sales, namely turnover, over cost of sales. *Net profit* is the excess of revenues in particular over expenses. For the purpose of this report net profit is calculated before taxes.

Assets, liabilities and shareholders' funds are the three main categories included in company balance sheets. *Assets* can be defined, according to

Parker (1999), as rights or other access to future economic benefits controlled by a company as a result of past transactions or other events. Control derives usually from legal ownership. *Liabilities* are the obligations of a company to transfer economic benefits as a result of past transactions or other events. The relationship between assets, liabilities and shareholders' funds can be looked at either from the point of view of shareholders or from the point of view of the company as a whole. Very broadly, what a company owes subtracted from what a company owns is equal to the value of *shareholders' funds*. In other words, what a company owns is financed partly by the owners (the shareholders) and partly by outsiders (the liabilities).

The three categories can each be subdivided: for example, shareholders' funds can be divided into share capital and reserves; assets into fixed assets and current assets; and liabilities into current liabilities (creditors falling due within one year), creditors falling due after more than one year and provisions for liabilities and changes.

Fixed assets comprise those assets, which are intended for use on a continuing basis for the purpose of the company's activities. *Current (circulating, floating) assets* are those assets that are not intended for continuing use in a company's business; namely cash, debtors and stocks. *Cash* at bank may be thought to present no problem of valuation, but where it is held overseas and exchange rates are volatile, or the foreign currency cannot easily be remitted, its value may be uncertain. *Debtors* are amounts owing to a company. They are classified for disclosure purposes into several categories, such as trade debtors, amounts owed by group undertakings, amounts owed by associated undertakings, other debtors, called-up share capital not paid, prepayments and accrued income. (Parker, 1999) *Stocks* comprise goods or other assets purchased for resale; consumable stores; raw materials and components; products and services in intermediate stages of completion; and finished goods. Stocks are not regarded as fixed assets since they are acquired either for immediate resale or as raw materials for use or are the finished or partly finished (work in progress) results of any operation.

Current liabilities are also described in the group balance sheet as 'creditors: amounts falling due within one year', as opposed to *creditors falling due after more than one year*. *Provisions for liabilities and charges* are

defined as amounts retained, necessary for the purpose of providing for any liability or loss which is either likely or certain to be incurred, but uncertain as to the amount or as to the date on which it will arise.

The shareholders' funds section of the balance sheet is subdivided into share capital and reserves. *Share capital* is divided into shares of a fixed amount. The ownership of a share gives the shareholder a proportionate ownership of the company. *Reserves* arise either from the retention of profits or from events such as the issues of shares at a premium or the revaluation of assets.

Now, it is worth mentioning that shareholders differ from debenture-holders in three main ways: they are members (owners) of the company, not lenders; they receive dividends (a share of the profits), not interest; and, except in special circumstances, the cost of their shares will not be repaid to them by their company. (Parker, 1999)

After all the aforementioned necessary definitions, it is obvious that turnover and profit are not sufficient tools for the financial analysis. More indicators are needed and, thus, total assets should be examined in relation to shareholders' funds as well as debtors in relation to current liabilities. Additionally, financial ratios are calculated and analysed, since they are helpful in showing the progress of each company and contribute in order to provide a thorough and complete study. The ratios, which are used, are:

$$\text{Profit Margin (PM)} = \frac{\text{Profit before tax}}{\text{Turnover}}$$

$$\text{Return on Shareholders' Funds (ROSF)} = \frac{\text{Profit before tax}}{\text{Shareholders' Funds}}$$

$$\text{Return on Capital Empolyed (ROCE)} = \frac{\text{Profit before tax}}{\text{Total Assets less Current Liabilities}}$$

(Ive, 2005)

What follows is the analysis of the specific figures for the companies. Data comes out of the companies' websites or the interviews and is organised in charts and diagrams, which make the study easier to attend.

Before the actual financial analysis of the four separate companies, a reference to the term holding company is necessary, because most of the companies examined are holding companies. A *holding company* is an investment company consisting of shareholding in a variety of separate business operations. Although subsidiary businesses operate independently, have other shareholders and retain their original company names, the parent company is responsible for the buying and selling of subsidiaries with little involvement in their product or market strategy. Holding companies are flexible as they can use outside shareholders as partners and buy and sell their subsidiaries according to their interest in every context. Even though the hands-off management style and the rights of outside shareholders limit the control, the opportunities of synergy and the possibilities of sharing knowledge, still, where capital markets and markets for managerial labour do not work very well, holding companies fill a useful gap, letting subsidiaries gain access to investment capital and gifted employees. (Johnson et al, 2005)

3.2 ELLINIKI TECHNODOMIKI TEB

As it has already been stated, ELTEB is the result of the merger of TEB, ELLINIKI TECHNODOMIKI and AKTOR. TEB and AKTOR used to be family-owned companies, whereas the capital of ELLINIKI TECHNODOMIKI has always been divided into shares. Nowadays, 34% of the share capital of ELTEB is held by a small group of investors, who take part in the board of directors, while the remaining 66% is widely traded.

The turnover of ELTEB as well as its profit followed an upcoming movement from 2001 until 2003, with a major rise between 2001 and 2002 (fig. 1, 2). Although ELTEB is active in several fields, it can be easily and safely argued that this rise is mainly attributable to construction and, more specifically, to public works for the 2004 Athens Olympic Games, since the turnover and profit of AKTOR, the construction company of ELTEB group, presented a huge rise between 2001 and 2002 (fig. 3, 4). Since 2004, the

turnover and profit have decreased, mainly due to the end of the Olympics, according to the company.

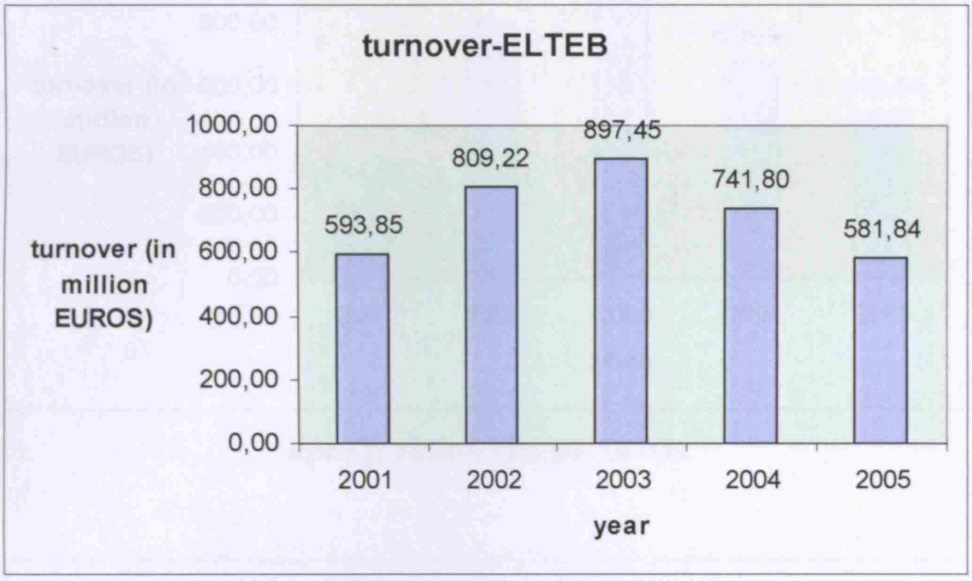


figure 1: TURNOVER OF ELTEB

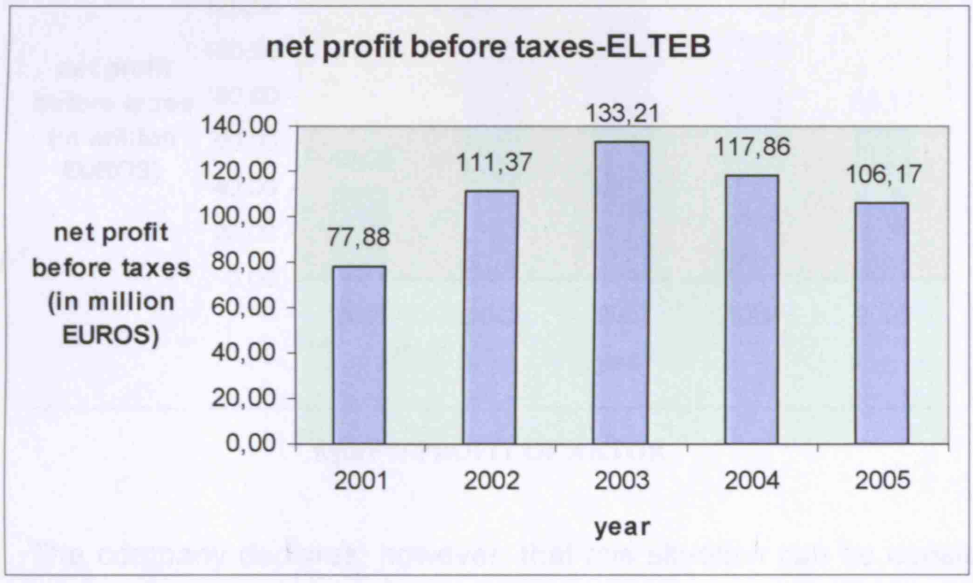


figure 2: PROFIT OF ELTEB

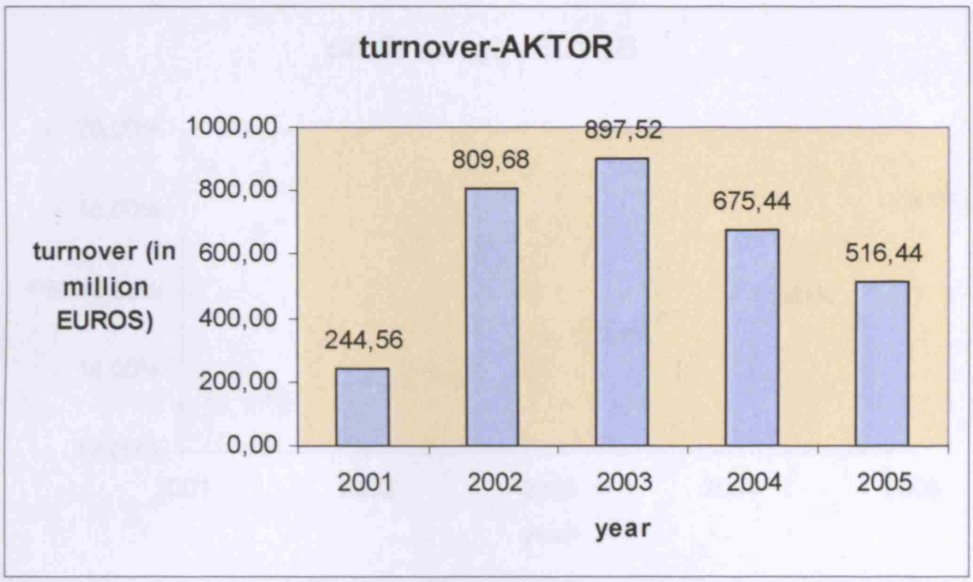


figure 3: TURNOVER OF AKTOR

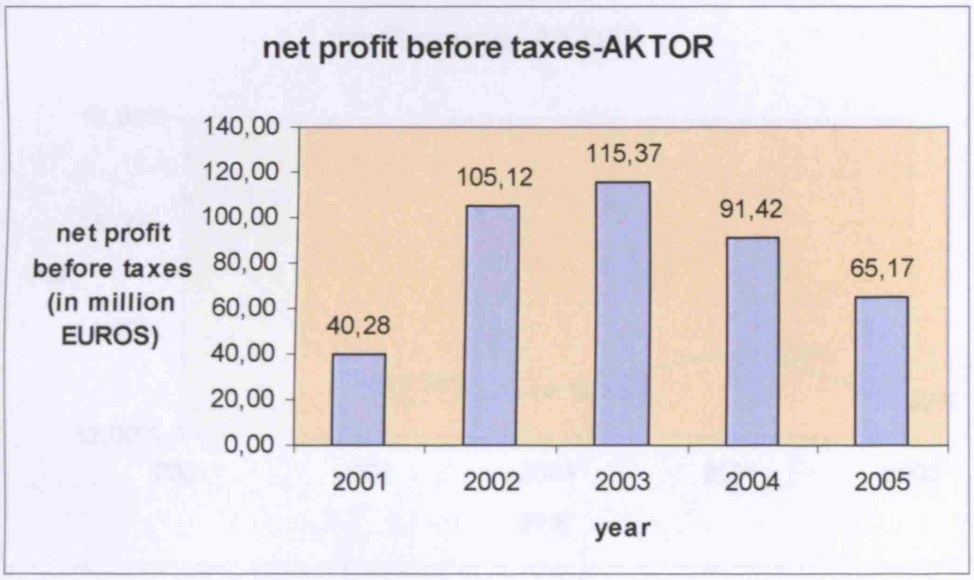


figure 4: PROFIT OF AKTOR

The company declares, however, that this situation can be considered temporary, as there are a lot of new activities. Nevertheless, the profit margin, the ratio which combines turnover and profit, increased considerably for ELTEB from 2001 until 2005 (fig. 5), while for AKTOR a major decline was observed in 2002 and a steady rise followed until 2004 (fig. 6).

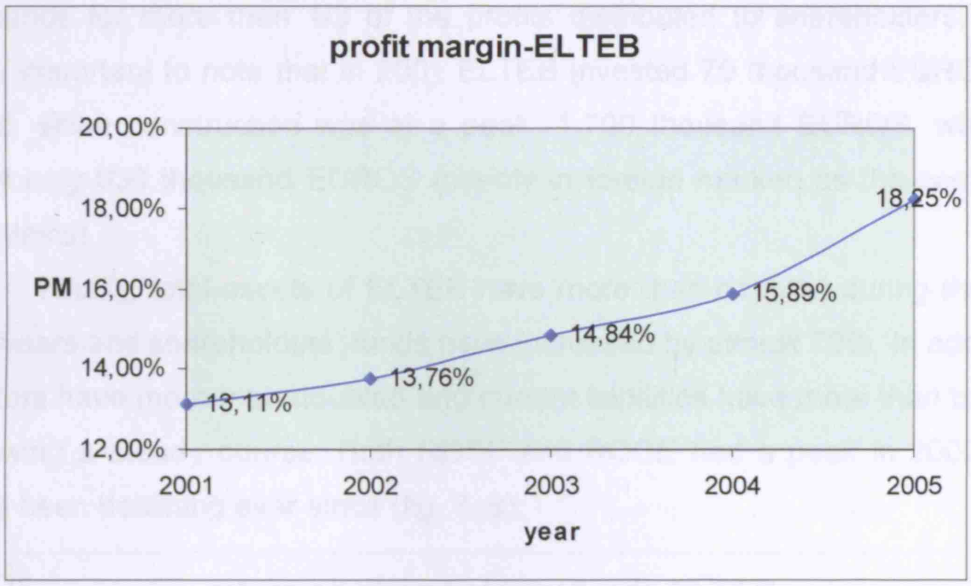


figure 5: PM OF ELTEB

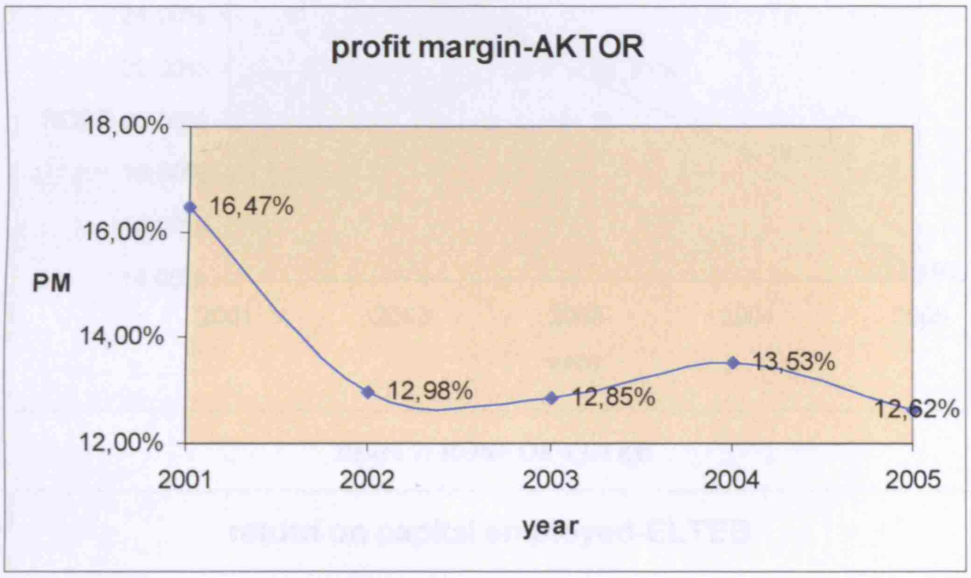


figure 6: PM OF AKTOR

The question, how turnover and profit are created and how they are used, arises. The company states that formerly turnover and profit used to derive from public and private projects in equal percentages. On the contrary, during the last few years the volume of public projects has risen and, hence, private ones, mainly housing, cover only 30-35%. As to how the profits are distributed, the company affirms that they abide by the law and 1/3 of the profits become taxes, 1/3 circulating capital and the rest is available for distribution to shareholders. However, the decline of the last couple of years

demands for more than 1/3 of the profits distributed to shareholders. It is, also, important to note that in 2001 ELTEB invested 70 thousand EUROS, in 2002, when construction was at a peak, 1,700 thousand EUROS, while in 2004 only 630 thousand EUROS (mainly in foreign market, as the company maintains).

Finally, total assets of ELTEB have more than doubled during the last five years and shareholders' funds have increased by almost 70%. In addition, debtors have more than doubled and current liabilities have more than tripled, following a steady course. Both ROSF and ROCE had a peak in 2002 and have been declining ever since (fig. 7, 8).

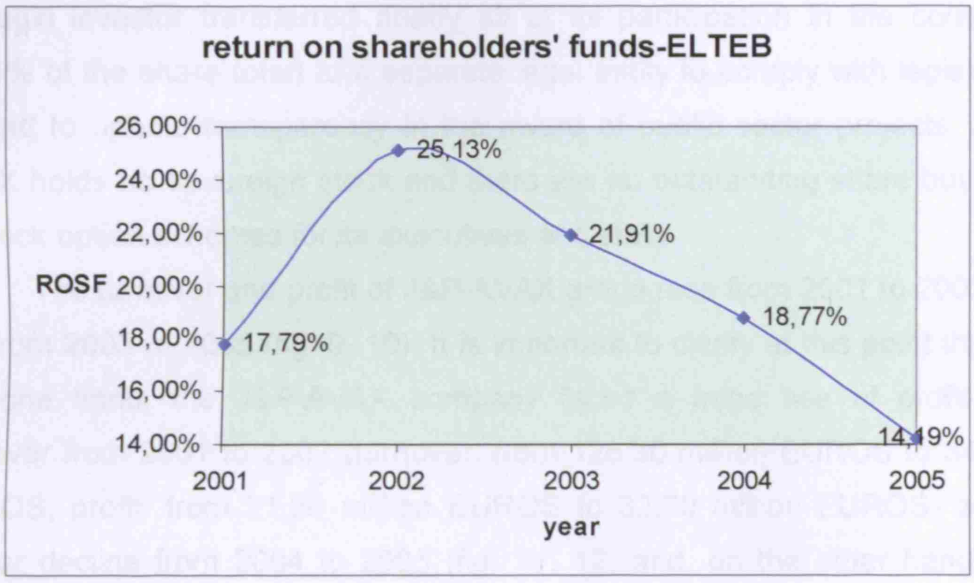


figure 7: ROSF OF ELTEB

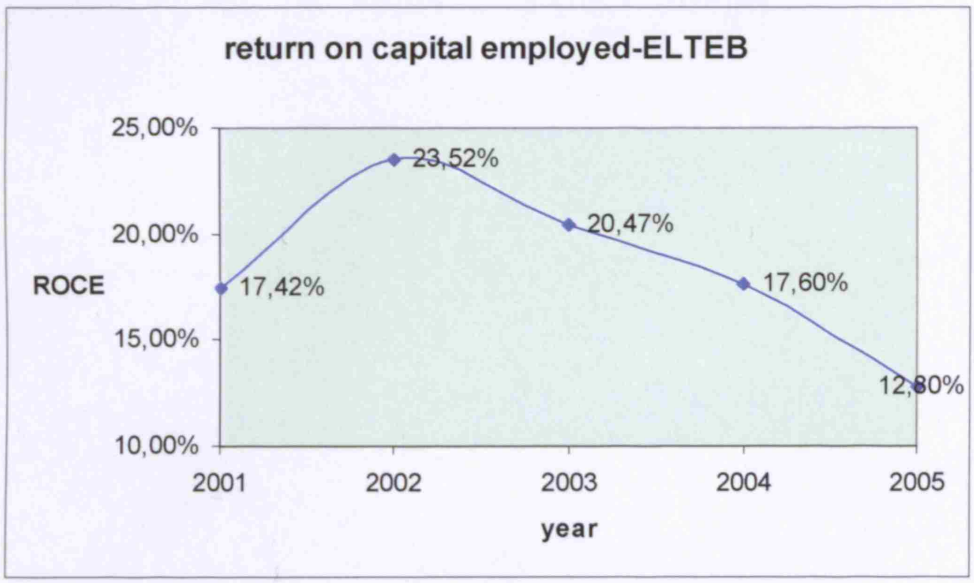


figure 8: ROCE OF ELTEB

3.3 J&P-AVAX

AVAX, listed on the Athens Stock Exchange's Main Market since 1994, raised new capital to finance further investments in 1997. In June 1999 AVAX struck a strategic and shareholding partnership with J&P Group, via a capital increase in which its shareholders waived their rights in favour of the new strategic investor, who provided 42.4 million EUROS, used along with own equity amounting to 7.5 million EUROS to finance the acquisition of 100% J&P-HELLAS. Moreover, it can be mentioned that in November 2000 the strategic investor transferred nearly all of its participation in the company (47.1% of the share total) to a separate legal entity to comply with legislation passed to uphold transparency in the award of public sector projects. J&P-AVAX holds no sovereign stock and there are no outstanding share buyback or stock option schemes for its executives and staff.

The turnover and profit of J&P-AVAX group rose from 2001 to 2003 but fell from 2003 to 2005 (fig. 9, 10). It is important to clarify at this point that on the one hand, the J&P-AVAX company faced a huge rise of profit and turnover from 2001 to 2002 (turnover: from 126.30 million EUROS to 348.20 EUROS, profit: from 21.60 million EUROS to 32.70 million EUROS) and a similar decline from 2004 to 2005 (fig. 11, 12) and, on the other hand, the variations of these figures for the J&P-AVAX group are smoother.

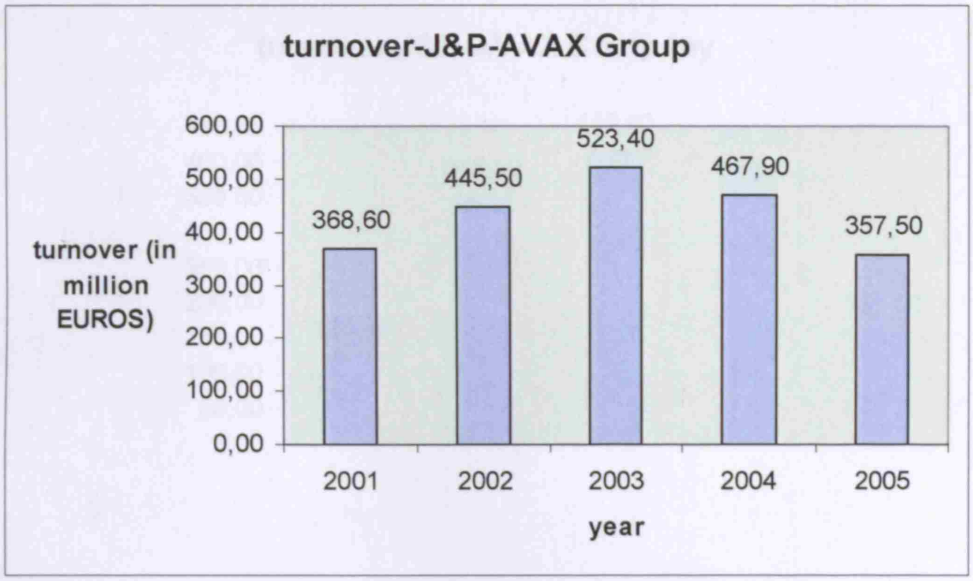


figure 9: TURNOVER OF J&P-AVAX GROUP

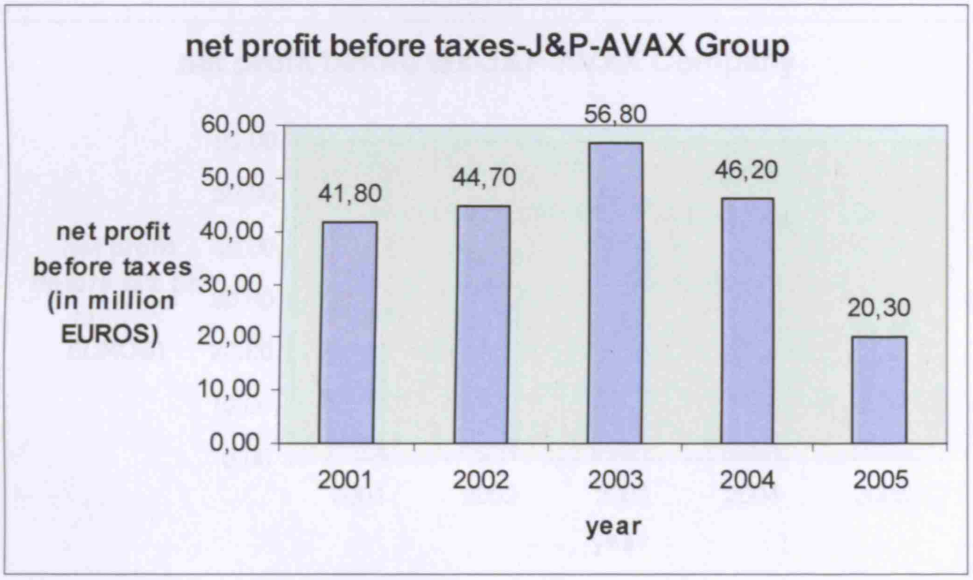


figure 10: PROFIT OF J&P-AVAX GROUP

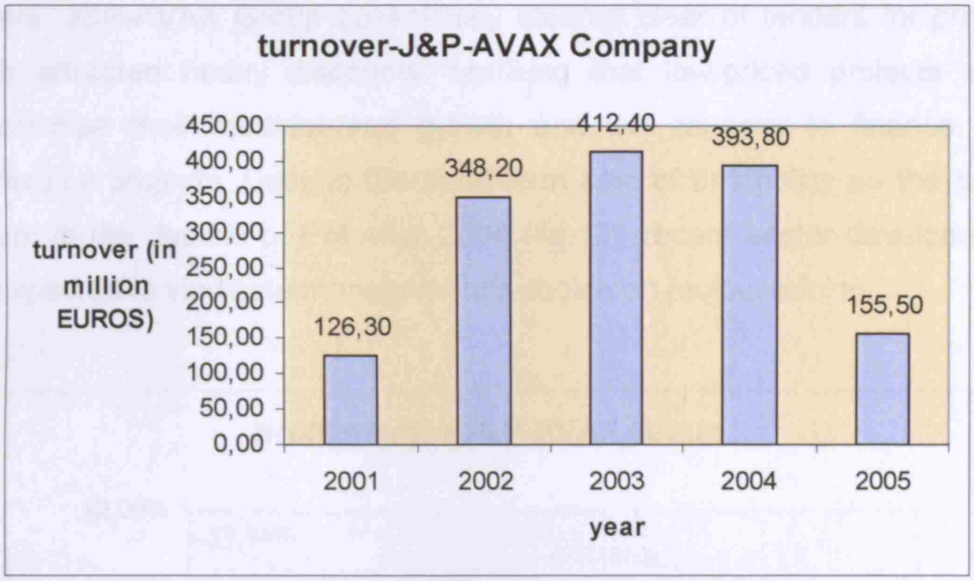


figure 11: TURNOVER OF J&P-COMPANY

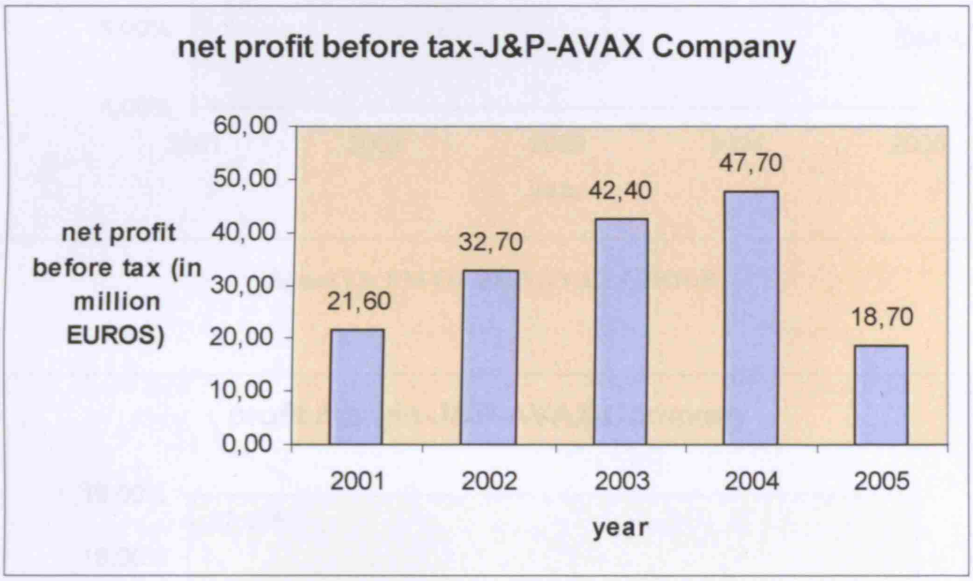


figure 12: PROFIT OF J&P-AVAX COMPANY

The company explains the reasons of the last-two-year decline: the flow of new public works is gradually being restored following the sharp drop in the government's public works schedule in the post-Olympic era due to the fiscal crunch and the shift in the public works biding process. The first tenders of public works under the new bidding process attracted large price discounts, but this situation has eased more recently due to the erosion of competitiveness of those companies which bid aggressively in the early

tenders. J&P-AVAX Group consciously steered clear of tenders for projects which attracted heavy discounts, realising that low-priced projects would compromise their medium-term growth and the capacity to finance large concession projects. Despite the short-term cost of this policy on the group, evident in the decline of PM after 2004 (fig.13), recent sector developments are expected to vindicate management's choice on project pricing.

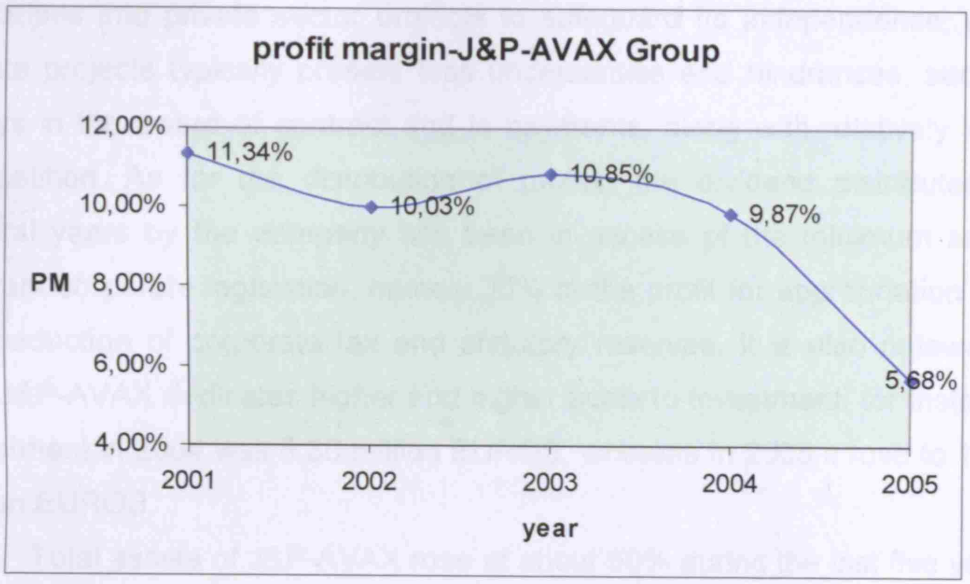


figure 13: PM OF J&P-AVAX GROUP

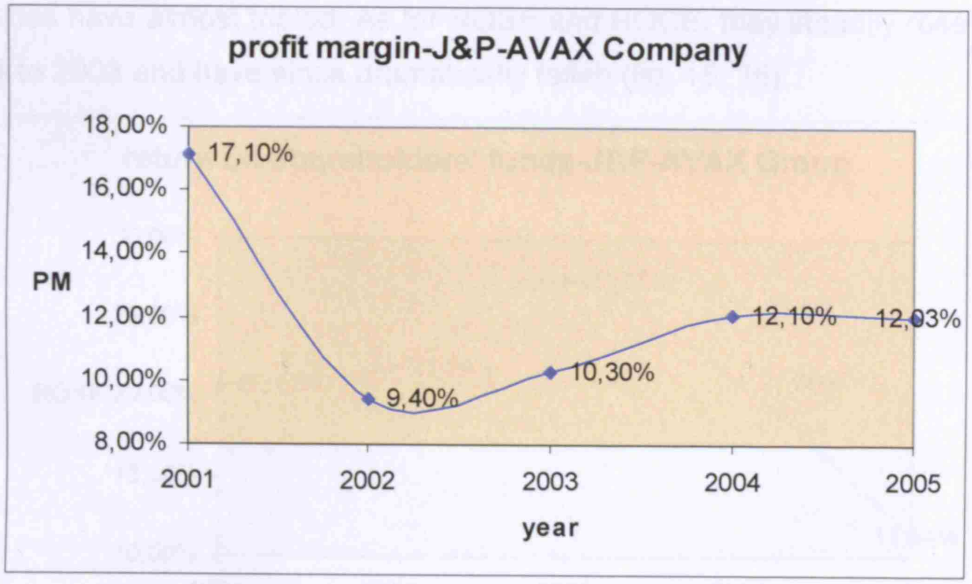


figure 14: PM OF J&P-AVAX COMPANY

Turnover and profit derive from both public and private projects. J&P-AVAX participates in tenders for public projects and has successfully delivered several projects for the Greek State and public sector entities, including industrial buildings, hospitals, education facilities, sport venues (with a large market share in the preparation of the Olympic Games), museums and convention centres, infrastructure projects and roadworks, water management, dam and bridges. Besides the group has expanded its operations into private sector projects to safeguard its independence, since private projects typically present less uncertainties and hindrances, such as delays in the award of contract and in payments, along with relatively lower competition. As for the distribution of profits, the dividend distributed for several years by the company has been in excess of the minimum set by relevant corporate legislation, namely 35% of the profit for appropriation after the deduction of corporate tax and statutory reserves. It is also noteworthy that J&P-AVAX dedicates higher and higher sums to investment; for instance, investment in 2004 was 6.30 million EUROS, whereas in 2005 it rose to 16.40 million EUROS.

Total assets of J&P-AVAX rose at about 50% during the last five years, while shareholders' funds slightly rose until 2004 and have since fallen by 20%. Debtors have almost doubled during the last five years and current liabilities have almost tripled. As for ROSF and ROCE, they steadily rose from 2001 to 2003 and have since dramatically fallen (fig. 15, 16).

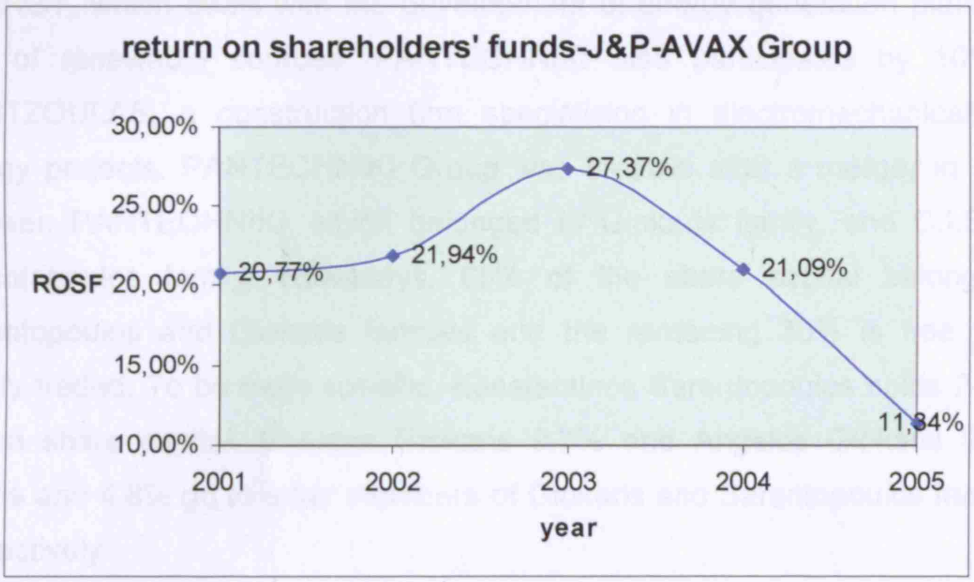


figure 15: ROSF OF J&P-AVAX GROUP

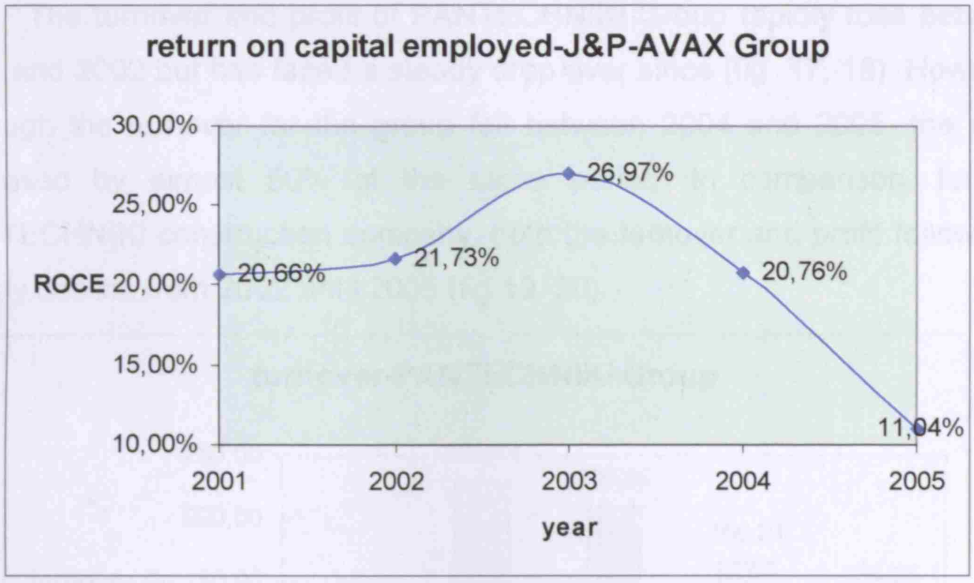


figure 16: ROCE OF J&P-AVAX GROUP

3.4 PANTECHNIKI

PANTECHNIKI Group is one of the leading construction companies in Greece and has been active for more than 40 years in the field of construction and infrastructure works. The group of PANTECHNIKI currently consists, among others, of a construction company called LAMDA TECHNIKI, which specialises in marine works, the construction company LMN, the company PROMAS, which provides project management services and VIOSAR ENERGY, which deals with the development of energy generation plants by way of renewable sources. PANTECHNIKI also participates by 10% in GANTZOULAS, a construction firm specialising in electromechanical and energy projects. PANTECHNIKI Group was created after a merger in 2002 between PANTECHNIKI, which belonged to Giokaris family, and C.I.S., of Sarantopoulos family. Nowadays, 65% of the share capital belongs to Sarantopoulos and Giokaris families and the remaning 35% is free float, widely traded. To be more specific, Konstantinos Sarantopoulos holds 24.2% of the share capital, Christos Giokaris 9.7% and Angelos Giokaris 9.7%. 16.6% and 4.8% go to other members of Giokaris and Sarantopoulos families respectively.

The turnover and profit of PANTECHNIKI Group rapidly rose between 2001 and 2002 but has faced a steady drop ever since (fig. 17, 18). However, although the turnover for the group fell between 2004 and 2005, the profit increased by almost 50% at the same period. In comparison, for the PANTECHNIKI construction company, both the turnover and profit followed a steady decline from 2002 until 2005 (fig.19, 20).

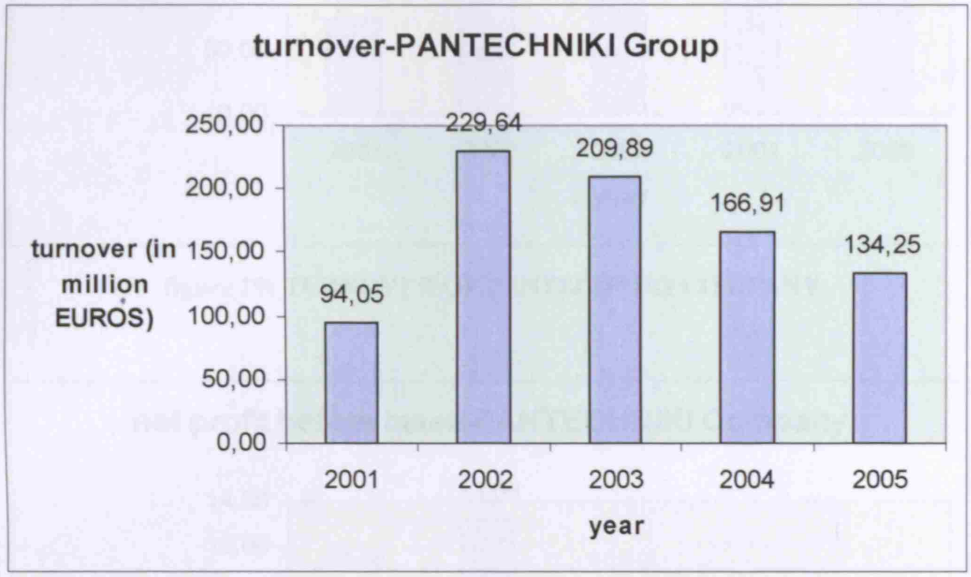


figure 17: TURNOVER OF PANTECHNIKI GROUP

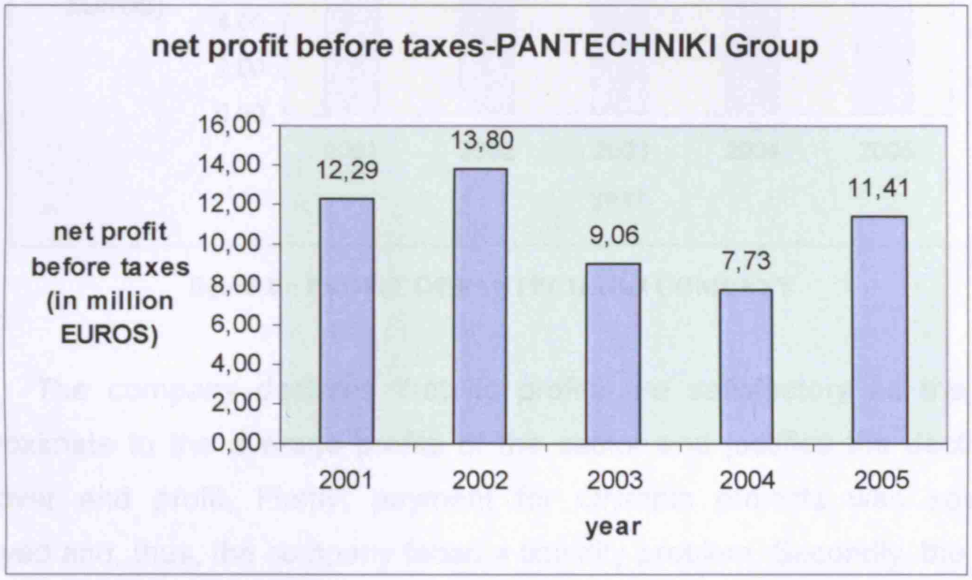


figure 18: PROFIT OF PANTECHNIKI GROUP

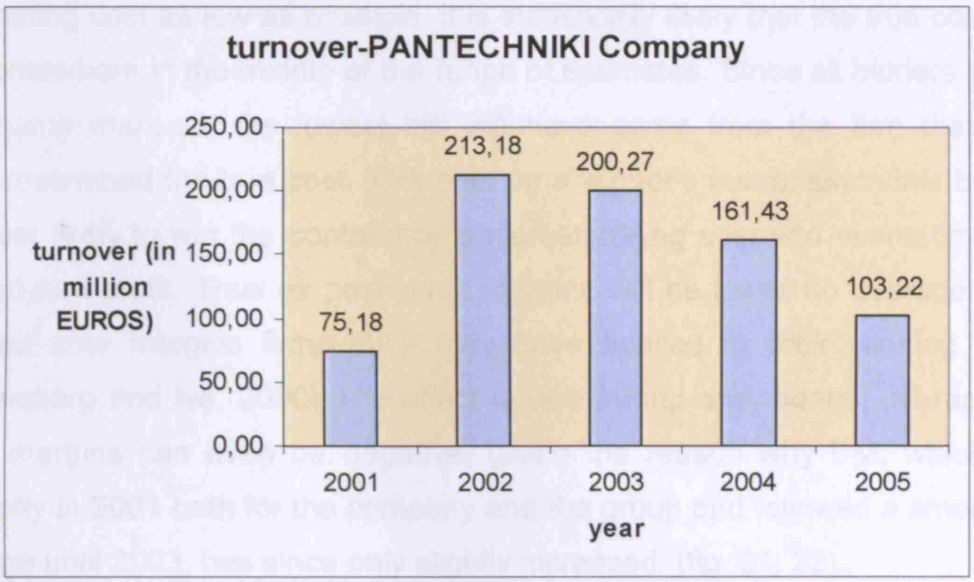


figure 19: TURNOVER OF PANTECHNIKI COMPANY

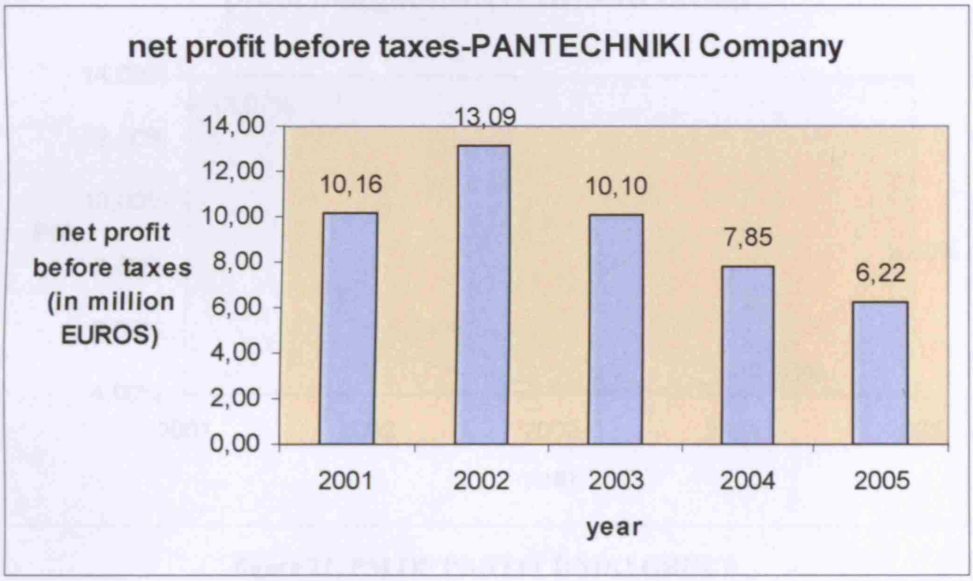


figure 20: PROFIT OF PANTECHNIKI COMPANY

The company declares that its profits are satisfactory as they are approximate to the average profits of the sector and justifies the decline of turnover and profit. Firstly, payment for Olympic projects was severely delayed and, thus, the company faced a liquidity problem. Secondly, the post-Olympic era followed by the government's public works policy created competitiveness in the market and, as a result, the winner's curse was a common problem during every bidding process. To explain, for bidders of the same project, cost estimates will differ. Supposing that each tender aims at

estimating cost as low as possible, it is statistically likely that the true cost will lie somewhere in the middle of the range of estimates. Since all bidders apply the same mark-up, the lowest bid will have come from the firm that has underestimated the true cost. This sets up a winner's curse, since this bidder is most likely to win the contract by underestimating cost and overestimating its out-turn profit. Thus ex post profit margins will be lower on average than the ex ante margins firms think they have applied to their winning bids. (Gruneberg and Ive, 2000) The effect is very strong and, hence, average ex post margins can even be negative, giving the reason why PM, which fell abruptly in 2001 both for the company and the group and followed a smoother decline until 2003, has since only slightly increased. (fig. 21, 22).

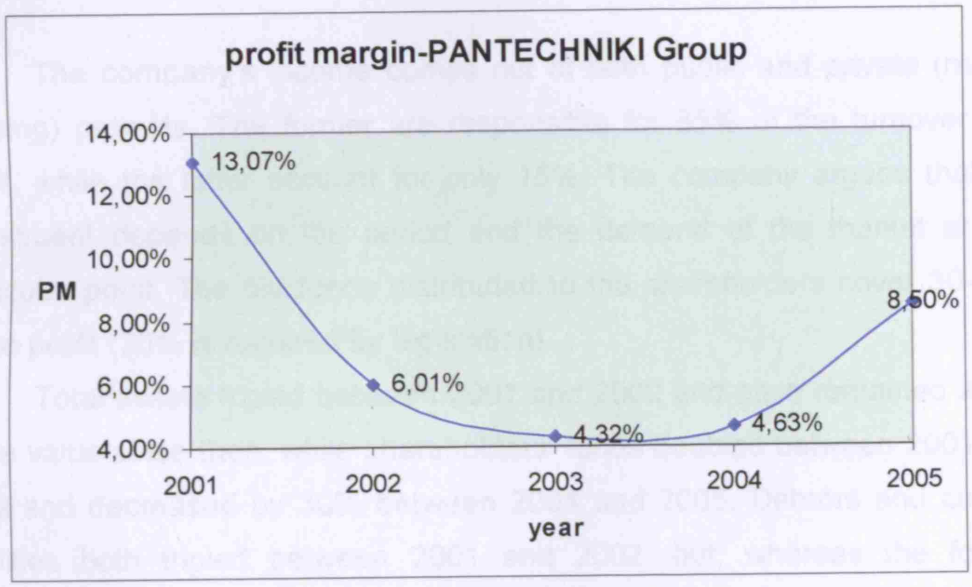


figure 21: PM OF PANTECHNIKI GROUP

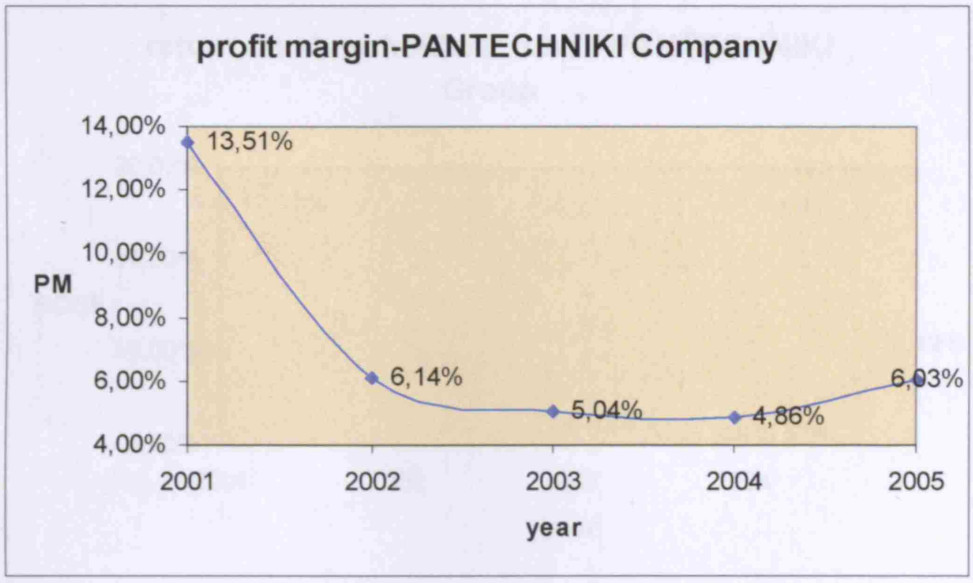


figure 22: PM OF PANTECHNIKI COMPANY

The company's income comes out of both public and private (mainly housing) projects. The former are responsible for 85% of the turnover and profit, while the latter account for only 15%. The company argues that the investment depends on the period and the demand of the market at any particular point. The dividends distributed to the shareholders cover 30-35% of the profit (30% is required by legislation).

Total assets tripled between 2001 and 2002 and have remained at the same value since then, while shareholders' funds doubled between 2001 and 2002 and decreased by 30% between 2004 and 2005. Debtors and current liabilities both tripled between 2001 and 2002, but, whereas the former decreased by 30% between 2004 and 2005, the latter increased by 60% at the same period. Correspondingly, ROSF and ROCE declined from 2001 until 2004, but have risen during the last years (fig. 23, 24).

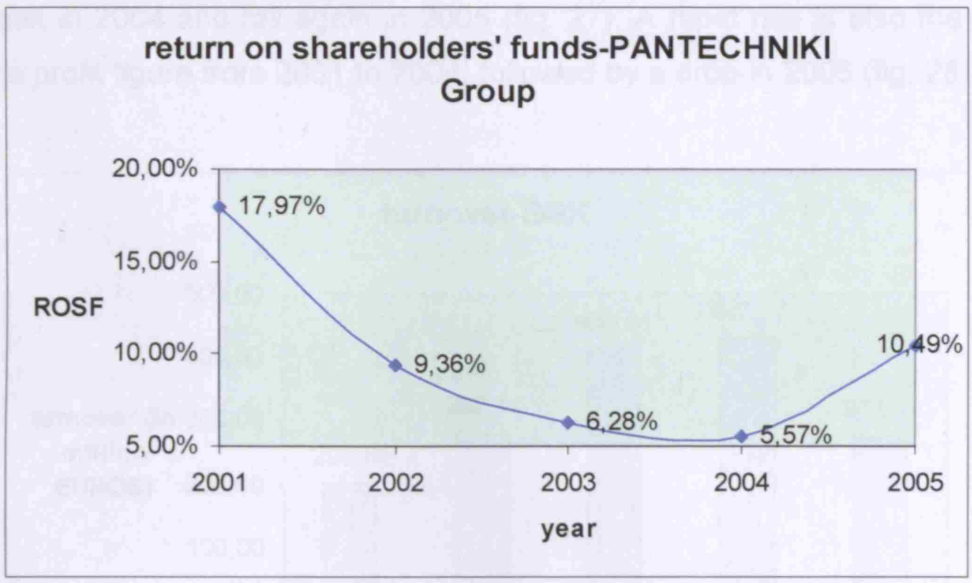


figure 23: ROSF OF PANTECHNIKI GROUP

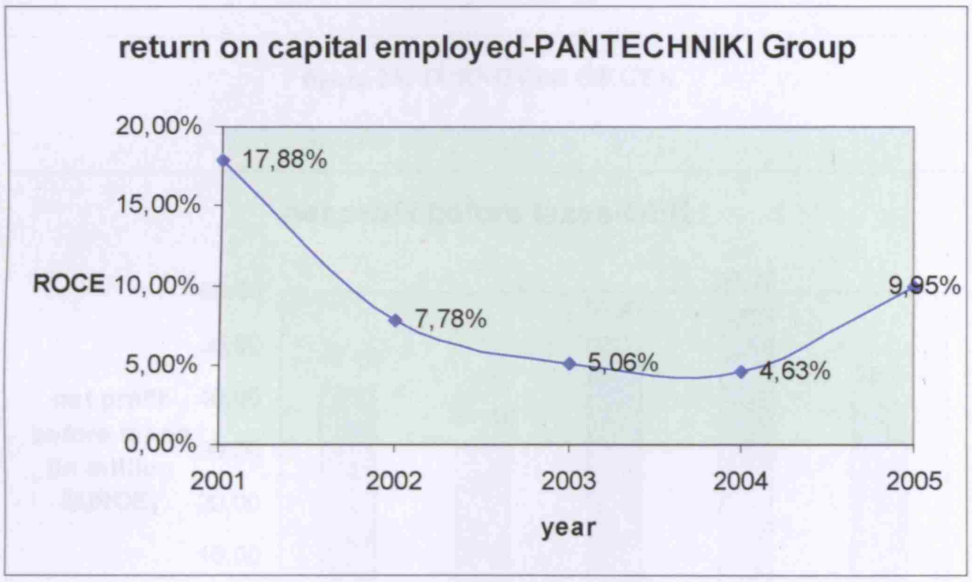


figure 24: ROCE OF PANTECHNIKI GROUP

3.5 GEK

The turnover of GEK doubled from 2001 to 2004 due to the Olympic Games but in 2005 decreased to half (fig. 25). Profit of GEK, strangely enough, decreased from 2001 to 2002, but increased by 60% in 2003 to fall again in 2005 (fig. 26). As for TERNA, the construction company of the group, turnover quadrupled between 2001 and 2002, doubled again in 2003 to reach

its peak in 2004 and fall again in 2005 (fig. 27). A rapid rise is also the case for the profit figure from 2001 to 2004, followed by a drop in 2005 (fig. 28).

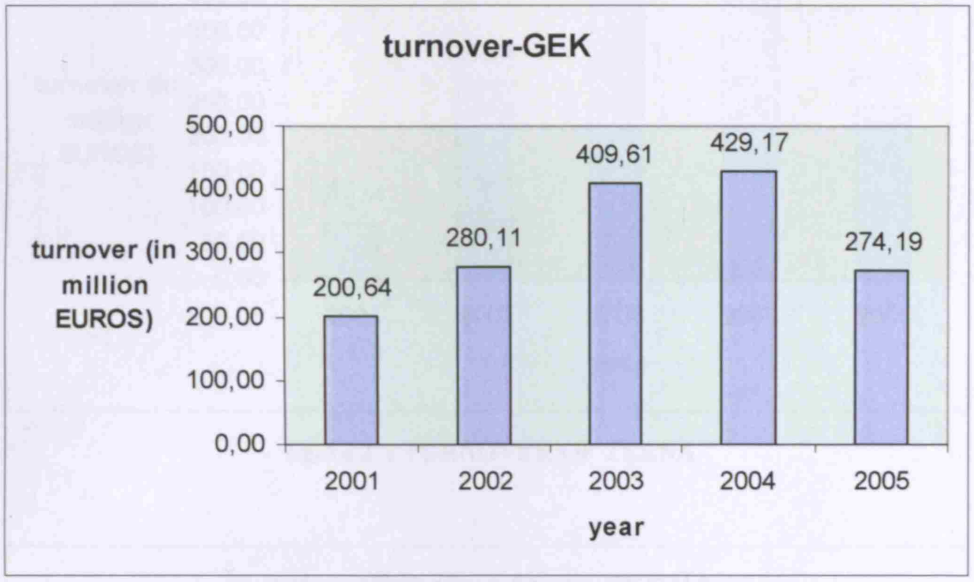


figure 25: TURNOVER OF GEK

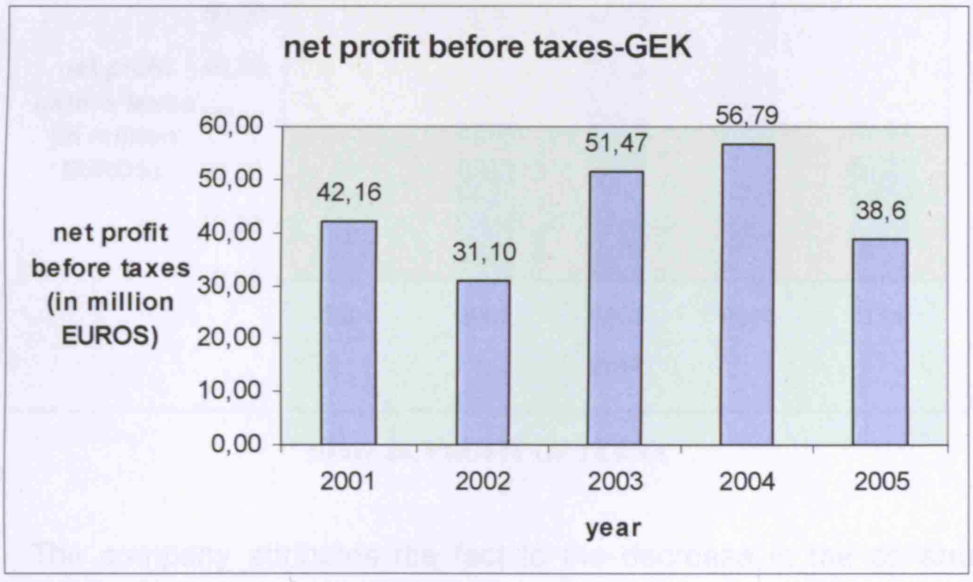


figure 26: PROFIT OF GEK

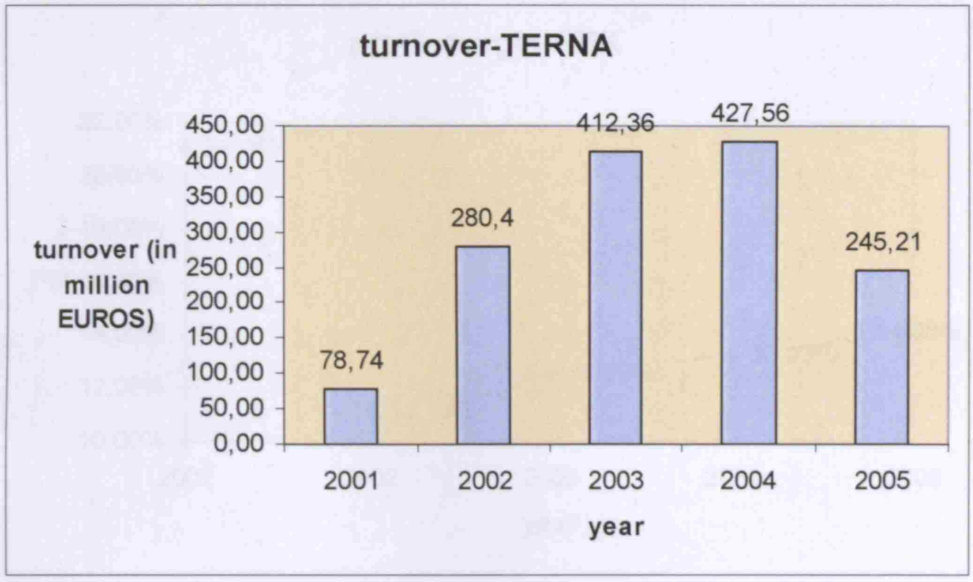


figure 27: TURNOVER OF TERNA

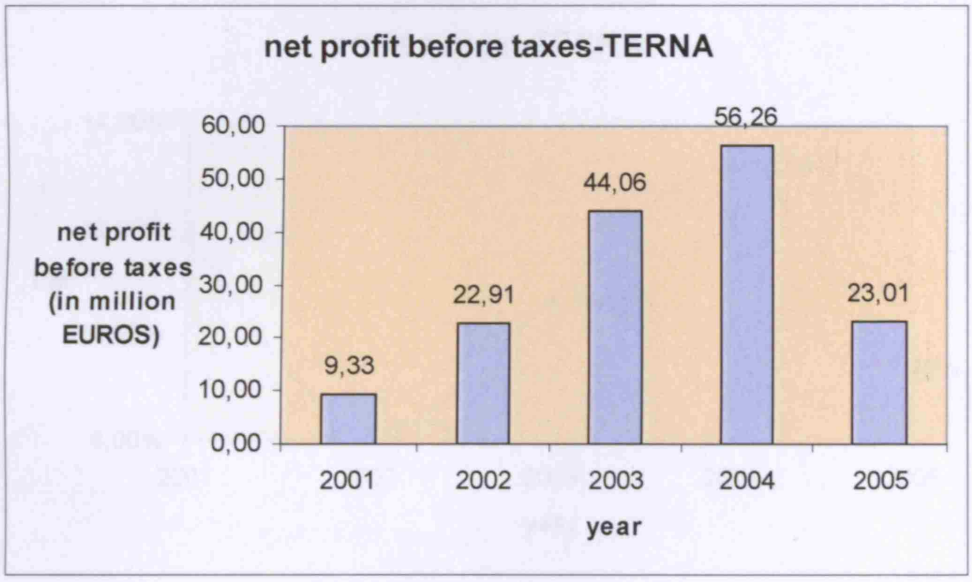


figure 28: PROFIT OF TERNA

The company attributes the fact to the decrease in the construction activity after the end of the Olympics and adds that diversifying is the key strategy to regain its previous prosperity. PM of GEK decreased rapidly between 2001 and 2002, but has slightly increased ever since (fig. 29). PM for TERNA, however, decreased rapidly as well from 2001 to 2002, but also increased as rapidly until 2004 to drop again in 2005 (fig. 30).

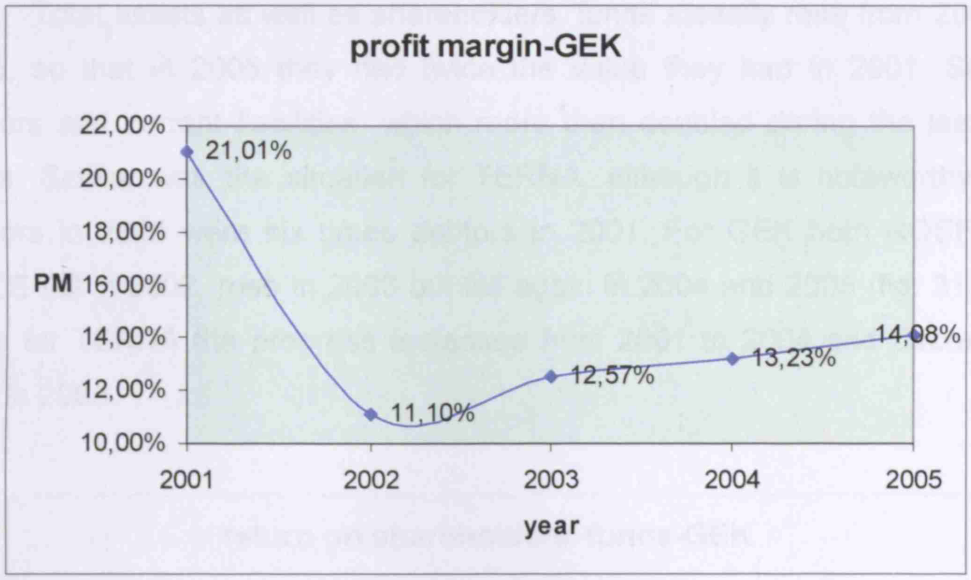


figure 29: PM FOR GEK

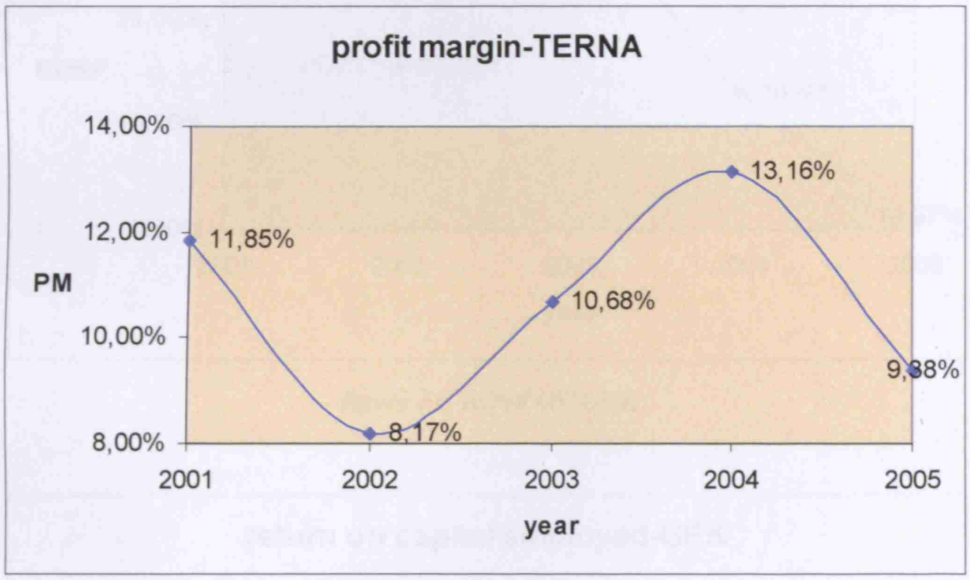


figure 30: PM FOR TERNA

The company mainly undertakes public projects, which are responsible for the larger part of its turnover and profit. Private projects also exist but they are not considered as significant as the public ones in financial terms. The company seems to increase its investment during the last two years, in an attempt to counterbalance construction recession through working in other fields. As far as dividends are concerned, the company distributes what is by law enacted.

Total assets as well as shareholders' funds steadily rose from 2001 to 2005, so that in 2005 they had twice the value they had in 2001. So did debtors and current liabilities, which more than doubled during the last five years. Similar was the situation for TERNA, although it is noteworthy that debtors in 2005 were six times debtors in 2001. For GEK both ROSF and ROCE fell in 2002, rose in 2003 but fell again in 2004 and 2005 (fig. 31, 32), while for TERNA the progress increased from 2001 to 2004 and decreased only in 2005.

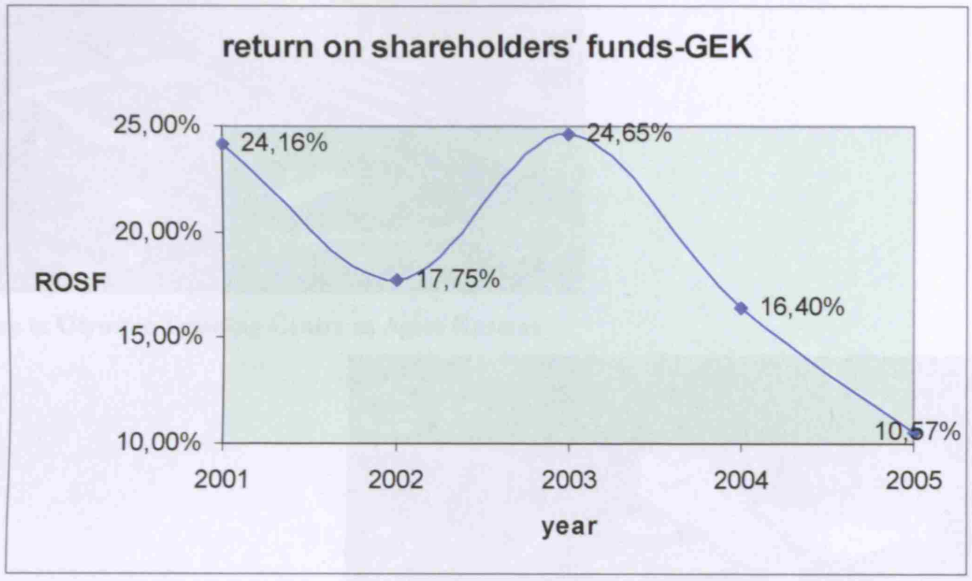


figure 31: ROSF OF GEK

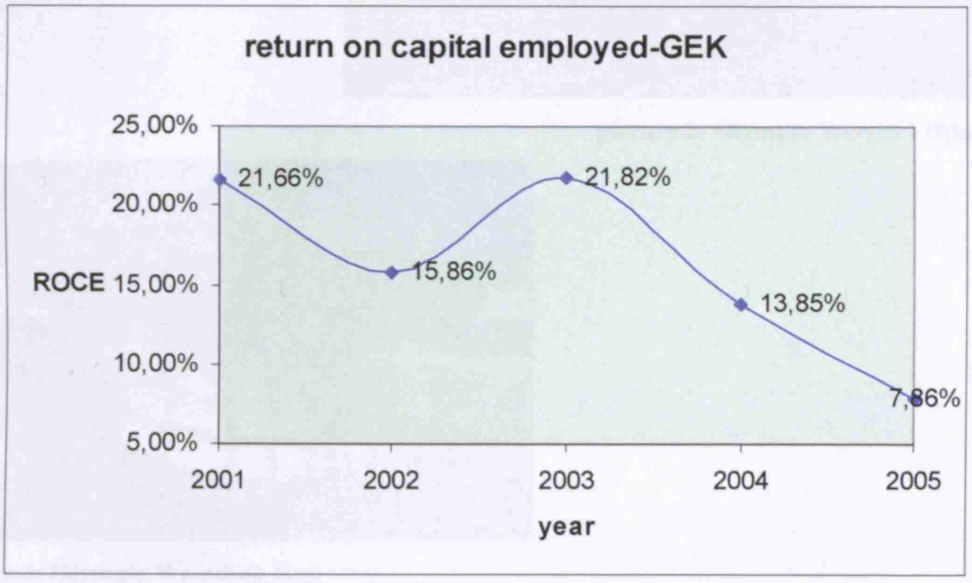


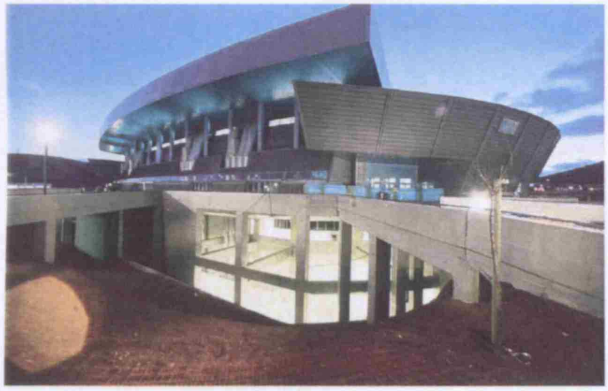
figure 32: ROCE OF GEK

3.6 Conclusion

Overall, the sample examined has given valuable information about major contracting companies in Greece. From 2001 to 2004 most of them enjoyed a rise of construction activity, because of the 2004 Athens Olympics and, thus, of turnover and profit.

picture 1: Olympic Training Centre at Agios Kosmas

picture 2: Olympic Weight Lifting Hall



picture 3: Olympic Wrestling Hall

Nonetheless, since then they suffered stagnation, because the Government did not procure many new projects and even the few projects under bidding process demanded heavy discounts. Moreover companies faced a liquidity problem, as the payment for the Olympics projects was delayed. Finally, in most cases, ROSF and ROCE increased until 2003 and decreased after the mentioned date.

CHAPTER 4: MERGERS AND ACQUISITIONS

4.1 Introduction

Acquisition is where strategies are developed by taking over ownership of another organisation. Worldwide merger and acquisition takes place on a major scale. Horizontal merger is about combinations of two firms in the same line of business. A vertical merger involves companies at different stages of production. A conglomerate merger involves companies in unrelated lines of businesses. (Brealey et al, 2006)

It is generally accepted that the 1990s merger movement was motivated by different factors from earlier ones in the 1960s or the 1970s-80s. The changing environment is closely related to thinking about acquisitions. New markets, globalisation, technology or responding to changes in government regulation are often touted as specific reasons for such expectations. (Sorensen, 2000). Companies wanting to grow faster than internal investment allows find mergers the best method. For example, the speed with which it allows the company to enter new product or market areas is a major driving force behind merger and acquisition activities.

There may also be financial motives for acquisitions. Johnson et al (2005) provide examples to support that argument. If the share value of price/earnings (P/E) ratio of a company is high, the motive may be to spot and acquire a firm with a low share value or P/E ratio. Indeed, this is one of the major stimuli for the more opportunistic acquisitive companies. An extreme example is asset stripping, where the main motive for the acquisition is short-term gain by buying up undervalued assets and disposing of them piecemeal. Sorensen (2000), conversely, proves that profitability is the only significant characteristic of merging companies identifiable with financial ratios. Additionally, target companies with above average liquidity are more likely to be acquired by an exchange of stock and low liquidity companies are more likely to be acquired by a cash purchase. To sum up, Sorensen (2000)

concludes that financial ratios are much less useful for predicting companies that have the tendency to merge. Perhaps many companies desire to use acquisitions to increase their market power, but businesses with average or below average profit find acquisition less feasible. Such companies are more likely to be targets than acquirers. Profitability is the only overall significant identifier and, in consequence, acquiring firms tend to be more profitable than both target firms and nonmerging firms.

Finally, acquiring firms are usually successful businesses, driven by key stakeholders, seeking continuous growth by external acquisition. There may be capability considerations, such as to exploit an organisation's core competences, cost efficiency, learning and, equally, to confront competition or deregulation.

In spite of all the benefits of mergers described above, questions have been raised as to whether this market-based system actually is in the best interests of the shareholders. Most mergers and expectations fail to deliver the promised benefits to shareholders and, at least, in the short/medium term, they are likely to lead to loss of shareholder value. The criticism has tended to focus on the conflict of interest for a board of directors between their personal positions and careers (as executives) and the best interests of shareholders. The directors may pursue mergers because it would enlarge their empire, improve their financial rewards or because they feel that investment analysts will expect acquisitive growth. There are sometimes the reverse criticisms that directors launch defensive measures against take-over offers even if this is in the longer-run interest of the shareholders and positively beneficial to other stakeholders, such as employees or customers. (Johnson et al, 2005) Nevertheless, most mergers in the 1990s seemed to be friendly with shareholders by promising bigger profit due to synergistic benefits from mutually reinforcing firms. A soaring stock market has meant that a record number of companies are acquired by exchange of stock instead of by cash purchase. Such deals do not drain cash for new debt service, so new sales revenue flow more directly into net income. (Sorensen, 2000)

Furthermore, companies face many challenges in the wake of a takeover as Thomson and McNamara (2002) note. For the acquirer, it must successfully integrate its new assets and seek to reap benefits from its outlay.

For the company that has been taken over, it must find its place in the new corporate culture yet not lose its confidence amid the shake-up. A dilemma is the combination of opposites, for instance, simultaneous pursuit of economies of scale and economies of flexibility. The management of acquiring corporation is faced with an initial dilemma, namely how to integrate efficiently the acquired firm into the systems of the wider corporation without destroying its distinctive features, that will generate new wealth for the corporation. A second dilemma may be save costs today through redundancies or gain potential benefit in the future through innovative redeployment of underemployed human resources. Thomson and McNamara (2002) suggest that corporate entrepreneurial activities help the acquisition to add value to the corporation as a whole, since new wealth can be created through novel combinations of distinctive knowledge, resources and capabilities.

What follows, describes the mergers and acquisitions of major contractors in Greece by examining the sample. In particular, analysis is made on whether and when the four companies merged, why and what problems they faced and are still facing. The shareholders' point of view, mentioned above, is not within the purpose of the report.

4.2 The legislation

It is often stated that the law of 2001 was the main reason which lead contracting companies to merger, because it provided the motives as well as favourable terms to merge. That is why this law is analysed below.

To begin with, all contractors in Greece are forced by law to belong to the Register of Experience of Contarctors (MEK*). The number of levels of experience for every speciality has been defined to four: Α, Β, Γ, Δ. The registration of graduates of superior universities in the first level of the Register (A-MEK) can be realised after three years of employment on their speciality. For graduates of technological institutions five years of employment on projects relevant to their studies are needed. In every case, experience

*MEK stands for the Greek translation of the Register of Experience of Contractors, namely Μητρώο Εμπειρίας Κατασκευαστών

and employment must be proved via necessary employment certificates. The Minister of Public Works decides the minimum employment needed for each speciality to be able to climb the four levels of the Register (A, B, Γ, Δ-ΜΕΚ). (Soldatos, 2002)

For contracting companies there is another Register (ΜΕΕΠ*), where they must be listed in order to undertake public projects. In 1994 this Register contained eight classes (Α΄, Β΄, Γ΄, Δ΄, Ε΄, ΣΤ΄, Ζ΄, Η΄) and criteria for registration were experience of employees, according to ΜΕΚ and shareholders' funds of the company.

For registration in the first (Α΄) class of ΜΕΕΠ, one Α-ΜΕΚ executive was needed and shareholders' funds had to be no less than 4,402 EUROS. For Β΄-ΜΕΕΠ class, one Β-ΜΕΚ executive and 17,608 EUROS were needed. The third class, Γ΄-ΜΕΕΠ, required one Γ-ΜΕΚ and 44,205 EUROS. For the Δ΄-ΜΕΕΠ class, the company had to employ at least one Δ-ΜΕΚ and one Β-ΜΕΚ or two Α-ΜΕΚ executives and the shareholders' funds had to exceed 110,051 EUROS. For the Ε΄-ΜΕΕΠ class, one Δ-ΜΕΚ, one Γ-ΜΕΚ and one Β-ΜΕΚ executives as well as 220,103 EUROS shareholders' funds were needed. The sixth class of the Matrix, ΣΤ΄-ΜΕΕΠ, required two Δ-ΜΕΚ and two Γ-ΜΕΚ executives and 440,205 EUROS shareholders' funds. The seventh class, Ζ΄-ΜΕΕΠ, required three Δ-ΜΕΚ and two Γ-ΜΕΚ executives and 1,320,616 EUROS shareholders' funds. Finally, for the eighth class of the Register, Η΄-ΜΕΕΠ, five Δ-ΜΕΚ and six Γ-ΜΕΚ executives as well as 5,282,465 EUROS were needed. There were some other detailed terms for the registration on the eight ΜΕΕΠ classes, too, which are not regarded as important for the purposes of this report.

The idea of listing contracting companies into the Register only makes sense if it is taken into account that members of every class can bid for specific projects. Thus, Α΄-ΜΕΕΠ contracting companies could undertake projects whose budget was less than 58,694 EUROS, Β΄-ΜΕΕΠ 234,776 EUROS and Γ΄-ΜΕΕΠ 586,940 EUROS. Contracting companies of Δ΄-ΜΕΕΠ could bid for projects whose budgets varied from 234,776 EUROS to 1,467,351 EUROS, Ε΄-ΜΕΕΠ from 586,940 EUROS to 2,934,703 EUROS,

*ΜΕΕΠ stands for the Greek translation of Register of Contracting Companies, namely Μητρώο Εργοληπτικών Επιχειρήσεων

ΣΤ΄-ΜΕΕΠ from 1,173,881 EUROS to 5,869,406 EUROS, Ζ΄-ΜΕΕΠ from 2,641,232 EUROS to 17,608,217 EUROS and Η΄-ΜΕΕΠ from 7,043,287 EUROS to 35,216,434 EUROS. For sums larger than that joint ventures had to be formed.

The aforementioned legislation was valid until 2001, where the new law 2940/2001 reversed the equilibrium in the Register of Contracting Companies. It is noteworthy that the number of upper class of contracting companies, which were 60 in 2001, dropped to 14 in 2002.

To be more specific, according to the 2001 law, the Register ΜΕΕΠ is now divided into seven classes (1, 2, 3, 4, 5, 6, 7) plus A1 and A2 for small-medium companies. A1 class requires two A-ΜΕΚ executives, while A2 requires one B-ΜΕΚ or two A-ΜΕΚ executives. The 1st-ΜΕΕΠ class requires two A-ΜΕΚ and one B-ΜΕΚ or two B-ΜΕΚ or one Γ-ΜΕΚ executive and bank accounts of 73,368 EUROS. For the 2nd-ΜΕΕΠ class two Γ-ΜΕΚ or one Γ-ΜΕΚ and two B-ΜΕΚ or one Δ-ΜΕΚ executives, bank accounts of 140,866 EUROS and fixed assets of 35,217 EUROS are needed.

For classes 3 to 7 there is a special formula of classification, together with directions given as far as the staff is concerned. For example, 3rd-ΜΕΕΠ class requires two Δ-ΜΕΚ and one Γ-ΜΕΚ executives, 4th-ΜΕΕΠ class requires three Δ-ΜΕΚ and one Γ-ΜΕΚ executives, 5th-ΜΕΕΠ class requires four Δ-ΜΕΚ and one Γ-ΜΕΚ executives, 6th-ΜΕΕΠ class requires six Δ-ΜΕΚ and four Γ-ΜΕΚ executives and 7th-ΜΕΕΠ class requires eighteen Δ-ΜΕΚ and fourteen Γ-ΜΕΚ executives. Besides, the formula applied in order to classify contracting companies is

A*70%+B*30%+Γ=Total

The value of total determines the category where the company belongs. The value of A depends on turnover, shareholders' funds and fixed assets, while that of B depends on current assets and debtors as well. The law for every case defines the value of Γ.

The law specially cares for mergers. Notably, in case of merger after 1.1.2001 the value of Γ is the sum of all the values of Γ of companies, which merge. So is the case as well for all other financial indicators. It is obvious that companies, which merge, can easily be classified in a higher class.

To be more thorough, the budgets of projects undertaken by companies of each class must be presented. Companies of A1-ΜΕΕΠ can undertake projects whose budget is less than 90,000 EUROS, A2-ΜΕΕΠ 300,000 EUROS and 1st-ΜΕΕΠ 586,940 EUROS. Companies of 2nd-ΜΕΕΠ can bid for projects costing from 146,735 EUROS to 1,173,881 EUROS, 3rd-ΜΕΕΠ from 440,205 EUROS to 2,934,703 EUROS, 4th-ΜΕΕΠ from 1,173,881 EUROS to 5,869,406 EUROS, 5th-ΜΕΕΠ from 2,934,703 EUROS to 17,608,217 EUROS and 6th-ΜΕΕΠ from 8,804,109 EUROS to 35,216,434 EUROS. Finally contracting companies of 7th-ΜΕΕΠ class can bid for public projects whose budgets exceed 29,347,029 EUROS, but there is no upper limit for them.

It is now easy to understand why the law 2940/2001 is regarded as the main reason for mergers. In other words, companies in order to undertake public projects of infinite budget had to grow as large as possible. A fast and easy way of achieving growth in this legal context was merger. It has to be mentioned that some companies instead of original mergers only merged fictitiously and, as a consequence, went bankrupt shortly after.

4.3 ELLINIKI TECHNODOMIKI TEB

The formation of ELTEB Group started from 1998 and was completed in July 2002. In detail, the strategic collaboration between the companies ELLINIKI TECHNODOMIKI and TEB through share exchange was announced in 1998. In 1999 AKTOR acquired 33.75% of ELLINIKI TECHNODOMIKI and the latter acquired 50.01% of the former. In 2001 ELLINIKI TECHNODOMIKI acquired the construction companies subsidiaries TOMI, KASTOR and TRIGONO. In 2002 the spin-off of the construction arms of ELLINIKI TECHNODOMIKI and TEB and their absorption by AKTOR as well as the absorption of TEB by ELLINIKI TECHNODOMIKI resulted in the formation of the parent company of the Group, ELTEB, holding company, and the new AKTOR, construction company. In 2002, also, KAMBAS REAL ESTATE absorbed the companies TECHNO and REDS and, hence, the new REDS, the investment branch of the Group in the field of real estate development,

was created. In December 2005 AKTOR was delisted from the Athens Stock Exchange and ELTEB acquired 100% of its share capital. At the same time, AKTOR transferred to the latter all its non-construction activities, including its participations to concession projects, maintaining only the construction and construction-related activities.

ELTEB refuses that legislation was the stimulus for the merger. On the contrary, merger was a strategic choice for the three companies long before the legislation. First, they considered the fact, that many smaller firms divided the turnover in many smaller parts, a great weakness of the Greek construction market. Second, their purpose was to prevent foreigners from intruding in the Greek market and especially in the concession market. Third, they aimed at making their presence visible to investors. To sum up, the current business group structure of ELTEB is the result, on the one hand, of a momentous decision and choice made by the three companies to join forces so as to become strong enough in order to face the challenge of a new generation of large projects in Greece and abroad and, on the other hand, of a thorough study of the business orientation for each of the companies, enabling the optimum distribution and exploitation of its potential and experience.

They seem satisfied by the result of the merger, declaring that it did not betray their expectations and did not create any problems. As a matter of fact, turnover and profit of AKTOR in 2002 quadrupled and turnover and profit of ELLINIKI TECHNODOMIKI at the same time increased by 30%.

4.4 J&P-AVAX

The company AVAX merged with its 100% subsidiary J&P-HELLAS as well as J&P-HELLAS's 100% subsidiary ETEK in 2002 and was renamed J&P-AVAX. To be more specific, in June 1999 AVAX announced a strategic and shareholding partnership with J&P Group via a capital increase. Its shareholders waived their rights in favour of the new strategic investor to finance the acquisition of 100% of J&P-HELLAS. In April 2000 the group of companies signed a strategic and shareholding partnership with ETETH. In

2002 the company absorbed its subsidiaries J&P-HELLAS and ETEK and was renamed into J&P-AVAX. In accordance with legislation J&P-AVAX was awarded a 7th-class work certificate, while ETETH acquired a 6th-class certificate.

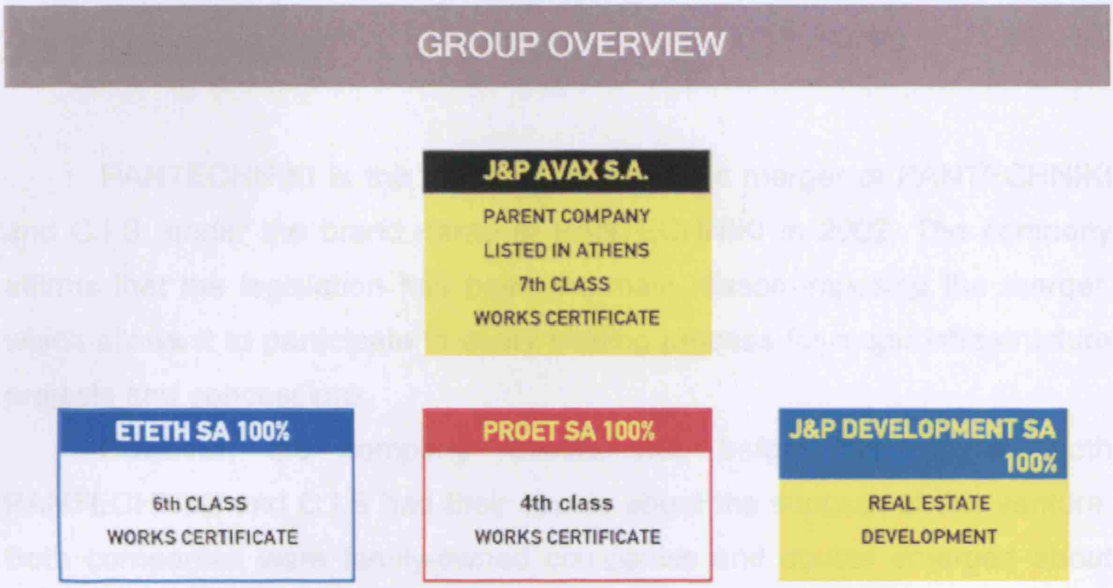


figure 33: J&P-AVAX GROUP STRUCTURE

The company argues that the legislation provided motives for restructuring, affecting the whole of the construction industry. Because of that, in 2002 J&P-AVAX realised a series of mergers and acquisitions of subsidiaries. The company adds that it had already made careful strategic business decisions over the recent years aiming mainly at maximising shareholders value, thus avoiding time pressures to secure the required certification. Having foreseen the upcoming trends in the market, J&P-AVAX proceeded early with the operational integration of its business units, while at the same time developing its strategies to increase profitability and to consolidate its leading position within the sector.

Nowadays, the company seems to enjoy the results of such strategic choices. By exploiting experience and technical knowledge of each of the subsidiaries, it has enlarged its construction base and responded to the competitiveness of the market, because of its ability to undertake at the same time several projects of different technical characteristics and budgets. In fact, the company boasts valuable experience, know-how and capacity and states

that the wave of mergers and acquisitions in the sector hardly touched upon it. Actually, in 2002 turnover and profit of the J&P company (as well as AVAX) increased rapidly.

4.5 PANTECHNIKI

PANTECHNIKI is the result of the strategic merger of PANTECHNIKI and C.I.S. under the brand name of PANTECHNIKI in 2002. The company affirms that the legislation has been the main reason imposing the merger, which allows it to participate in every bidding process for major infrastructure projects and concessions.

However, the company reveals that, before the merger, both PANTECHNIKI and C.I.S had their doubts about the success of this venture. Both companies were family-owned companies and doubts emerged about the co-existence and the avoidance of conflict of interests and mentalities. Certainly, meticulous controls were carried out to avoid any possibility of financial scandal (vacuums on the financial statement), but this was never the reason to worry. They were worried about other potential dangers; for example, they were not sure that they could agree in decision-making, have the same strategic goals and integrate efficiently without invalidating their previous competences.

Nowadays, they are satisfied with the merger and have found out that they communicate perfectly, having built a safe and trusting relationship. What is more, they enjoy financial results of the merger, as their turnover, total assets and capital have rapidly increased. They argue, in addition, that their personnel is now larger not only in number but also in experience and technical knowledge. Finally they express their opinion that the merger rescued them from going bankrupt in the post-Olympic era, where no major public projects were under bidding process.

4.6 GEK

The transformation of GEK into a holding company was announced in 2002 and its construction sector was transferred to TERNA. Specifically, in 1999 GEK announced its cooperation with TERNA. In September 2002, GEK absorbed the companies DOMIKI ANAPTIXI, ERGODINAMIKI, INIOCHOS, PSIKTIKI ELLADOS and its construction field was absorbed by TERNA. In 2004 GEK merged with HERMES (GEK participated in the share capital of HERMES since 2000).

The company declares that the legislation provided the necessary environment so that the company could attempt restructuring. The expected benefits, namely to become stronger, to ensure its interests in the Greek market and, most of all, to claim fairly a position in the international market, were only at a very small degree shaded by fears and doubts about compliance or conflict of mentality and interest.

The company nowadays notes that the operating merger of its activities proved successful, with the personnel playing a critical role in this process. The effort of its people and their devotion to the Group's goals and visions were those factors that lead to great success. It is worth mentioning that turnover of TERNA quadrupled in 2002 and turnover of GEK doubled between 2001 and 2003.

4.7 Conclusion

In conclusion, mergers are the most important strategic choice made by major contracting companies during the last five years. It is generally accepted that the law 2940/2001 provided favourable context for the companies to merge, but it is also true that several other advantages and positive effects of mergers were the driving forces. Contractors have overcome their doubts concerning combination on pursuit of interests by the different firms and are satisfied with the results.

CHAPTER 5: DIVERSIFICATION-INTERNATIONALISATION-PPP

5.1 Introduction

DIVERSIFICATION

At any level of industry definition, firms interact with competitors, who may be present across multiple industries. Firms can integrate vertically absorbing input providers and buyers along the value chain or horizontally across industries. *Diversification* is a strategy that takes the organisation into both new markets and products or services. It could be either related, which is strategy development beyond current products and markets, but within the capabilities or value network of the organisation or unrelated, which is the development of products and services beyond the current capabilities or value network. (Johnson et al,2005) Hillebrandt (2000) defines diversification as the process by which firms extend the range of their business operations outside those in which they are currently engaged. This broad definition includes (a)the process referred to as backward vertical integration, that is, the acquisition or development of businesses whose products are inputs to the firm's own main operations; (b)forward integration, that is, the extension of the firm's activities to those of the normal purchase of its products; (c)horizontal diversification, that is, a movement into other markets not involving the firm in any vertical relationships as in (a) or (b).

Diversification may be undertaken for a variety of reasons. First, there may be efficiency gains from applying the organisation's existing resources or capabilities to new markets and products or services. (Johnson et al, 2005) These are often described as economies of scope by contrast to economies of scale. In fact, Santalo and Becerra (2006) state that if there are economies of scope coupled with transaction costs between two specific industries, then all firms active in any of these industries could take advantage of being

present in the other one. That is why in industries in which all firms present a similar pattern of diversification and are active in a similar set of industries, the proportion of activity accounted by specialised firms is going to be smaller because they cannot take advantage of economies of scope of diversifiers. Second, there may also be gains from applying corporate managerial capabilities to new markets and products and services. In a sense, this extends the point above, but highlights skills that can easily be neglected. Third, having a diverse range of products or services can increase market power. With a diverse range of products or services an organisation can afford to cross-subsidise one product from surpluses earned by another in a way that competitors may not be able to. (Johnson et al, 2005)

At the same time, Santalo and Becerra (2006) argue that the relationship between diversification and performance is not homogeneous across industries but crucially depends on particular industry characteristics. In other words, there should neither be a positive nor a negative diversification-performance relationship valid across all industries. For example, when the industry has a relatively large number of players, specialised firms might be more efficient than multi-industry firms. To summarise, in industries with certain characteristics associated with high transaction costs (few players present also in a similar set of other industries) diversifiers account for a larger share of sales than specialists.

In the construction industry, not only do firms produce different products within the contracting operation, but they also go outside the contracting business into property development, materials production and other activities. One of the main reasons for backward vertical integration in the construction industry is uncertainty in the availability of supplies, especially during the periodic booms in the industry. A firm, which controls its own source of supply, is more likely to be able to meet delivery schedules. It also avoids the transaction costs of purchasing, including price negotiation. (Hillebrandt, 2000)

INTERNATIONALISATION

Internationalisation is a form of diversification concerned, as it is obvious, with the international diversity of an organisation. There are many reasons for organisations to follow a strategy of internationalisation. First, there may be market-based reasons. For instance, the globalisation of markets and competition can be seen as both cause and consequence of the internationalisation of individual organisations. Additionally, firms acting as suppliers to industrial companies may follow their customers when they internationalise their operations. By expanding its markets internationally a firm can bypass limitations in its home market. Furthermore, there may be opportunities to exploit differences between countries and geographical regions. Finally, strategies of internationalisation may also be pursued to build on and take advantage of strategic capabilities.

Especially for the construction sector, Crosthwaite (1998) proves by a survey of British firms that the aim of some of the larger companies has been to increase their overseas activities in an attempt to counteract some of the problems within the domestic construction market. However, overseas work carries higher risk than domestic work and companies therefore require higher returns to consider overseas work. In fact, respondents of the survey rank the increase in long term profitability as very important and the increase of short tem profitability as important reasons for operating overseas. Other reasons for operating overseas are to maintain shareholders return, diversify risk and balance growth. Their objectives include tapping new and booming markets, protecting company against cycles or maintaining edge over competitors. (Crosthwaite, 1998)

But how can internationalisation be successful? First, when it comes to conditions considered important for working in a particular country overseas the survey by Crosthwaite (1998) shows that political stability and potential economic growth are regarded as the most important ones. Additionally, companies will not enter markets where competition is intense and they may also pay little attention to their home country links. Second, it has been indicated that increase in overseas turnover has been accompanied by an increase in the number of overseas offices (Crosthwaite, 1998). Arditi and

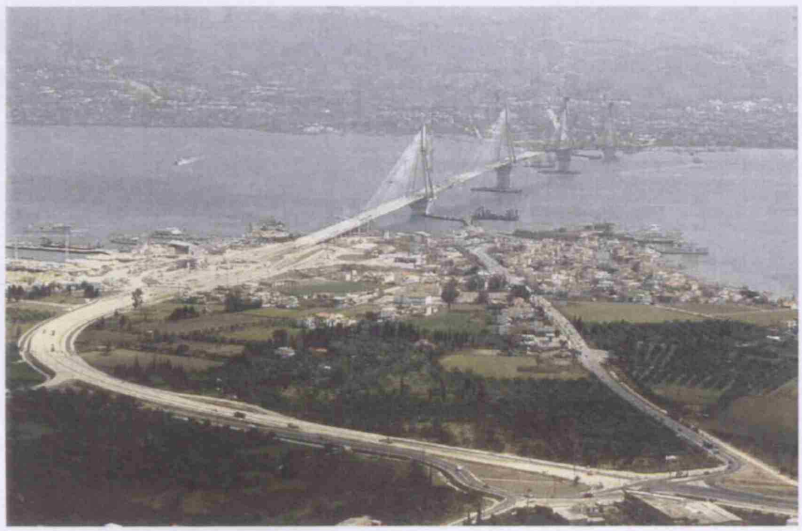
Gutierrez, stated in Crosthwaite (1998), suggest that one of the most successful strategies for penetrating into foreign markets, besides joint venturing, is to buy a stake in a local company particularly in countries where the government establishes strong barriers against foreign competition, an argument supported by Ive (1994).

PFI-CONCESSIONS

"The use of PFI as a procurement route for public sector works fundamentally alters the way in which the private sector relates to the public sector. The use of PFI alters procurement by the public sector from the purchase of facilities to the purchase of a service. At the heart of PFI is a change from the traditional role of the public sector as the client initiating a works programme to a requirement for the private sector to provide a service to the public sector for a contracted period of time. The emphasis for the private sector thus moves away from a concentration on simply constructing a facility for the public sector and then handing that completed facility over with little or no subsequent involvement. Rather, the private sector becomes the provider of the service, which the public sector client requires and is responsible for designing a facility, which meets that requirement, and then for operating the facility for the duration of the contract offered. In consequence, ownership of the facility and responsibility for its financing both pass to the private sector. The acronym DBFO (design, build, finance, operate), which is used to describe certain PFI projects, is in fact an accurate summation of what PFI means for the private sector." (Construction Industry Council, 1998)

PFI in Greece was introduced by law in 1996 but has not been very popular until the last few years. The commonest form is concessions, whose most important characteristic is the relation between the

private sector and the final user. To be more thorough, the private sector provides a specific service to the public, under control of the State. The concessionaire, the one who provides the services, namely the private contractor, is paid by taxes imposed on the users of the service and for some types of concession the public sector may also add some subsidies. The two main concession projects (shown in the pictures), which have taken place in Greece, are Attiki Odos Motorway and Rio-Antirion Suspended Bridge, which were both completed in 2004.



5.2 ELLINIKI TECHNODOMIKI TEB

ELTEB has invested in strategic fields other than construction, namely concessions, energy from renewable energy sources and environment and real estate development. Traditionally, the group's main field of activities has been construction with great synergies developed with its other activities; all other activities cover, at the moment, only 15% of the group activity. Moreover, ELTEB has minority shareholdings in selected sectors of medium-short term investment horizon, which are constantly growing and constitute significant opportunities for creation of value for the shareholders. These fields are the Casino, Telecommunications and Mines.

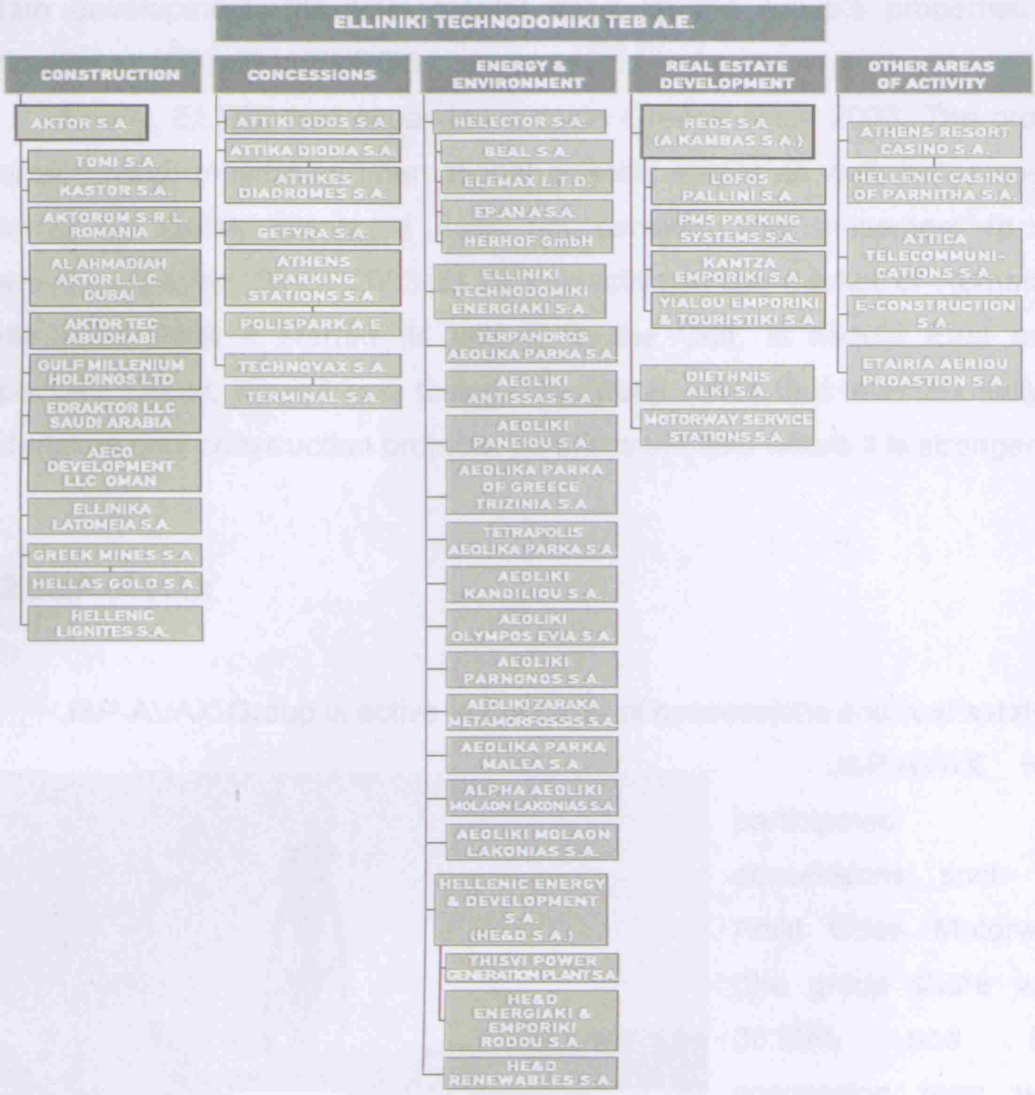


figure 34: ELTEB STRUCTURE

In the field of concessions, the group is a leader among domestic competitors in co-funded works, such as the participation in Attiki Odos Motorway and Rio-Antirion Bridge. Apart from participating in the construction of these works, the group also has a shareholding in the respective companies operating the works, gaining significant experience in the management of such works. ELTEB currently participates in the formations, which have been appointed temporary contractors to the Submarine Tunnel in Thessaloniki and the Corinth-Tripoli-Kalamata Motorway.

In the field of energy and environment, the group holds a leading position in Greece and Cyprus in matters of waste recycling, construction and operation of landfills and processing dangerous waste. In the field of real

estate development, the total market value of the group's properties is estimated at 100 million EUROS.

Finally, ELTEB has expanded outside Greece since 2003. The group reports having undertaken international projects earlier as well, but, since it followed its Greek clients, it does not consider this movement to be internationalisation. Since 2003 ELTEB is active in the market of Romania, while since 2004 it started its activity in the Gulf, in Middle East and, especially, Dubai, Kuwait and Qatar. The group notes that internationally it undertakes only construction projects, as this is the field where it is stronger.

5.3 J&P-AVAX

J&P-AVAX Group is active in the fields of concessions and real estate.

J&P-AVAX has participated in concessions such as Attiki Odos Motorway (the group share was 30.83% and the concession term was 25 years), Rio-Antirion Bridge (the group share was 11.2% and the concession term was 42 years) and several multi-storey car parks. The group is planning to bid for additional concessions to maintain a large backlog spanning well into the future and ensure long-term revenues.

In real estate, J&P-AVAX is focusing on quality projects, residential and holiday resorts and commercial uses, as well as the provision of advisory services. The group is also aiming at developing new markets and products, such as retirement villages.

Finally, the group, in association with J&P overseas (a company which enjoys a long presence and expertise abroad) participates in infrastructure projects and in the reconstruction of neighbouring countries and regions, such as Eastern and South-eastern Europe, Middle East and North Africa. For example, J&P-AVAX has constructed the Emirates Airline Technical Base in Dubai, shown in the picture above.

5.4 PANTECHNIKI

PANTECHNIKI has diversified its activities outside construction because it is trying to ensure that its turnover will not face any drop and to avoid risk and dependence on public projects. The group argues that this strategy development helps it enjoy greater returns out of its investment. Therefore, the group is active in waste recycling, in the field of energy and environment and has also shareholdings in car parks.

The group has already taken part in few concessions, concerning road infrastructure all over Greece. In detail, PANTECHNIKI took part in Attiki Odos Motorway with 20% and in Rio-Antirio Bridge with 4.84%. PANTECHNIKI is expecting concessions to help the sector recover, since they demand a great percentage of capital and employees. However, it speculates that only contractors with high capitals and expertise, who are capable of organising complex projects, will make profit of concessions.

Finally, the group was active in Cameroon in 1979, stopped for a while, but is now extremely competitive there again. Ten years ago, it entered the Balkan region market, since the political situation there was favourable for such a strategic movement. Now, PANTECHNIKI has its own subsidiaries in Romania, Bulgaria and Albania and is also thinking of expanding in the Middle East later, especially Qatar, Kuwait and Dubai.

5.5 GEK

GEK has diversified in the fields of concessions, energy, real estate and industrial projects. The group argues that investing in diverse activities was its hope in the post-Olympic era and has indeed been fruitful. GEK has achieved a multiple and powerful presence in different sectors and synergies between subsidiaries establishing economies of scale and as a result enjoys a strong financial position and diversifies business risk.

GEK has taken part in large-scale motorway concessions, multi-storey car parks and logistic centres and is still expecting a greater rise in its turnover due to the new concessions.

As far as energy production is concerned, the group has already received and developed a considerable number of production permits, both in renewable energy sources and thermal plants. In the real estate field, GEK takes careful steps to compile a real estate portfolio which does not only generate capital gains but also creates added value to construction. Finally, industrial projects are mainly involved with manufacture of wood and metal to create machinery used in construction and are, hence, supplementary to core business.

GEK has expanded in the Middle East, specifically Qatar and has founded its own subsidiary in Russia. The group is at the moment investigating the markets of Ukraine and Serbia and has already acquired land in Bulgaria.

5.6 Conclusion

Major contracting companies, speculating the possible decline of the market, diversified in strategic fields, usually related to construction (such as real estate) and, in few cases, unrelated (such as Casino). Furthermore, all of them have been working abroad during the last 5-10 years on construction projects, where they are more competent. They have been choosing countries of the former Soviet Union, which are near Greece and lack development,

Middle East, where extensive construction activity is taking place in recent years by contractors from all over the world, and in few cases developing regions, such as Africa. Finally, almost all major contractors have taken part in the two most important concession projects, which have been realised in Greece, namely Attiki Odos Motorway and Rio-Antirio Bridge. Since concessions demand high capital and expertise, they are particularly addressed to major contractors, who are expecting them to significantly help to overcome the post-Olympic era problems.

CHAPTER 6: CONCLUSION

The report aims at describing the situation of major contracting companies in Greece during the last five years, with special emphasis to financial indicators. Therefore, out of the thirteen largest companies in the country four have been selected to be further examined and analysed. It was decided that interviewing was the most appropriate method to approach the senior executives, who were capable of providing answers, clarifying, justifying.

Financial analysis indicates that the boom of 2001-2004 because of the 2004 Athens Olympics Games was followed by the post-Olympic Games slowdown of construction activity in Greece. In numbers, turnover and profit of each (average) company almost doubled from 2001 to 2003, but until 2005 fell by 70%. The recession became evident as early as mid-2004, when Games-related venues and infrastructure works were completed. The situation deteriorated in early 2005 as the government's fiscal problems lead to cutback in public works and very deep discounts were offered at public project tenders.

In the meantime, in 2002, the local construction sector was characterised by an intense wave of mergers and acquisitions. The application of law 2940 in 2001, concerning the allowance of several institutional or fiscal motives for merger of construction companies, resulted in a significant restructuring across the sector. Perspectives of large construction groups in the new environment are very promising and, thus, oligopoly is encouraged, strengthening the position of major contractors.

The four contracting companies, composing the indicative sample, prove, moreover, that major contractors in Greece have diversified in other strategic fields, in an attempt to overcome the national recession. They have mainly chosen related diversification, such as real estate or energy production or even production of industrial products necessary in the construction procedures. Some of them have also acquired minority shareholdings in fields irrelevant to construction. It is, however, generally accepted that activities

other than construction only account for a small percentage of their total activity.

Furthermore, major Greek contracting companies have been targeting overseas markets for the last few years, as internationalisation is another form of diversification. First and foremost, they prefer the Balkan region market, where emerging political conditions establish the role of Greece in their integration process crucial. Greek construction sector is also interested in the Middle East, where the building craze has been attracting contractors from all over the world during the last decades, and in, some cases, in the developing regions of Africa.

Finally, concession projects, announced since 1996 in Greece, are regarded as the most attractive national projects and are expected to contribute radically to the recovery of the sector. Greece has finished the first batch of large-scale infrastructure projects funded by private capital, including the new Athens International Airport, the Attiki Odos Motorway and the Rio-Antirion Suspended Bridge. Major contracting companies have taken part in the last two, since such large-scale private finance initiative projects require companies, which enjoy strong financial position. Unfortunately, contractors declare that the next set of privately-funded projects of similar size, mainly toll roads in the national highway network has been marred by long delays in the preparation of the design studies.

APPENDIX A: THE STRUCTURE OF THE INTERVIEW

A. KEY FINANCIALS

1. How would you describe the financial progress of the company for the last five years? (financial statements, profit and loss accounts, balance sheets)

2. When did the company enter the Stock Market? Is it a holding company? Who are the shareholders? What proportion of share capital strategic investors hold and what is widely traded hold?

3. Do you consider the profits and turnover of the company satisfactory? What percentage of the profits becomes dividends-return to the shareholders? What percentage of them is the remained profit? What percentage of your profits is invested? What are the criteria when making decisions on investment and liquidity?

4. Can you identify the percentage of your profit-turnover that comes out of public projects and the one that comes out of private? Can you also separate between infrastructure projects and buildings?

5. Which are the major financial risks for the company?

B. MERGERS

6. How would you describe the financial progress of the companies, that finally merged, before the merger (in numbers)?

7. Why was the merger decided? What were the possible dangers of this strategic choice?

8. Are the results the expected ones? Has the merger proved to be a successful movement?

C. THE CONSTRUCTION INDUSTRY IN GREECE: PROBLEMS AND POSSIBLE SOLUTIONS

9. After the Olympic Games, a very important source of funds does not exist. How much has this fact influenced the progress of the company and in what ways?

10. What other events have influenced the construction industry for the last two years? Which do you consider to be the reasons of the decline of the industry?

11. What would you suggest in order to overcome this difficult period?

12. The internationalisation, namely undertaking projects outside Greece, seems to be a solution. When did you start undertaking works in foreign countries, which countries especially and why?

13. Has the company diversified? If yes, what sectors have they chosen and why?

14. Has the company taken part in any PPP projects? What are your views on this topic? Do you think it will help the industry and the contractors overcome this difficult period?

APPENDIX B: FACTS AND FIGURES

This appendix indicates in numbers what chapter 3 presents in words and figures. All prices are in million EUROS and have been adjusted for inflation.

ELLINIKI TECHNODOMIKI TEB

	2001	2002	2003	2004	2005
Turnover	593,85	809,22	897,45	741,80	581,84
Net Profit before Tax	77,88	111,37	133,21	117,86	106,17
Profit Margin	13,11%	13,76%	14,84%	15,89%	18,25%
Total Assets	586,78	670,51	933,01	903,34	1323,96
Shareholders' funds	437,82	443,18	607,89	627,94	748,37
Debtors	168,02	199,65	292,83	284,26	450,83
Current Liabilities	139,75	197,06	282,17	233,64	494,57
Return on Shareholders' Funds (ROSF)	17,79%	25,13%	21,91%	18,77%	14,19%
Return on Capital Employed (ROCE)	17,42%	23,52%	20,47%	17,60%	12,80%

AKTOR

	2001	2002	2003	2004	2005
Turnover	244,56	809,68	897,52	675,44	516,44
Net Profit before Tax	40,28	105,12	115,37	91,42	65,17
Profit Margin	16,47%	12,98%	12,85%	13,53%	12,62%
Total Assets	258,33	418,23	525,13	505,57	701,00
Shareholders' funds	182,94	216,94	263,00	269,97	261,49
Debtors	71,43	198,18	290,94	272,26	411,70
Current Liabilities	66,26	192,67	243,01	274,79	420,67
Return on Shareholders' Funds (ROSF)	22,02%	48,46%	43,87%	33,86%	24,92%
Return on Capital Employed (ROCE)	20,97%	46,60%	40,89%	39,61%	23,25%

J&P-AVAX GROUP

	2001	2002	2003	2004	2005
Turnover	368,60	445,50	523,40	467,90	357,50
Net Profit before Tax	41,80	44,70	56,80	46,20	20,30
Profit Margin	11,34%	10,03%	10,85%	9,87%	5,68%
Total Assets	289,10	314,00	386,60	401,40	453,40
Shareholders' funds	201,30	203,70	207,50	219,10	179,00
Debtors	103,50	114,80	159,10	188,00	219,20
Current Liabilities	86,80	108,30	176,00	178,90	269,50
Return on Shareholders' Funds (ROSF)	20,77%	21,94%	27,37%	21,09%	11,34%
Return on Capital Employed (ROCE)	20,66%	21,73%	26,97%	20,76%	11,04%

J&P-AVAX COMPANY

	2001	2002	2003	2004	2005
Turnover	126,30	348,20	412,40	393,80	155,50
Net Profit before Tax	21,60	32,70	42,40	47,70	18,70
Profit Margin	17,10%	9,40%	10,30%	12,10%	12,03%
Total Assets	223,40	267,00	327,00	357,60	326,70
Shareholders' funds	182,70	177,60	174,90	194,90	185,30
Debtors	45,60	92,60	135,30	166,00	151,00
Current Liabilities	40,20	87,50	149,40	159,80	138,40
Return on Shareholders' Funds (ROSF)	11,82%	18,41%	24,24%	24,47%	10,09%
Return on Capital Employed (ROCE)	11,79%	18,22%	23,87%	24,12%	9,93%

PANTECHNIKI GROUP

	2001	2002	2003	2004	2005
Turnover	94,05	229,64	209,89	166,91	134,25
Net Profit before Tax	12,29	13,80	9,06	7,73	11,41
Profit Margin	13,07%	6,01%	4,32%	4,63%	8,50%
Total Assets	95,74	273,91	269,83	272,96	280,81
Shareholders' funds	68,39	147,43	144,38	138,80	108,76
Debtors	30,85	96,60	104,11	101,21	74,00
Current Liabilities	27,00	96,60	90,62	105,91	166,17
Return on Shareholders' Funds (ROSF)	17,97%	9,36%	6,28%	5,57%	10,49%
Return on Capital Employed (ROCE)	17,88%	7,78%	5,06%	4,63%	9,95%

PANTECHNIKI COMPANY

	2001	2002	2003	2004	2005
Turnover	75,18	213,18	200,27	161,43	103,22
Net Profit before Tax	10,16	13,09	10,10	7,85	6,22
Profit Margin	13,51%	6,14%	5,04%	4,86%	6,03%
Total Assets	85,81	261,11	250,12	244,55	248,52
Shareholders' funds	65,38	143,63	143,53	136,54	129,45
Debtors	18,76	88,64	95,68	94,09	46,93
Current Liabilities	20,33	92,03	82,26	95,24	103,63
Return on Shareholders' Funds (ROSF)	15,54%	9,11%	7,04%	5,75%	4,80%
Return on Capital Employed (ROCE)	15,52%	7,74%	6,02%	5,26%	4,29%

GEK

	2001	2002	2003	2004	2005
Turnover	200,64	280,11	409,61	429,17	274,19
Net Profit before Tax	42,16	31,10	51,47	56,79	38,6
Profit Margin	21,01%	11,10%	12,57%	13,23%	14,08%
Total Assets	275,38	296,54	353,41	594,77	700,51
Shareholders' funds	174,50	175,26	208,77	346,20	365,30
Debtors	73,79	82,52	118,22	240,02	162,92
Current Liabilities	80,71	100,47	117,57	184,64	209,61
Return on Shareholders' Funds (ROSF)	24,16%	17,75%	24,65%	16,40%	10,57%
Return on Capital Employed (ROCE)	21,66%	15,86%	21,82%	13,85%	7,86%

TERNA

	2001	2002	2003	2004	2005
Turnover	78,74	280,4	412,36	427,56	245,21
Net Profit before Tax	9,33	22,91	44,06	56,26	23,01
Profit Margin	11,85%	8,17%	10,68%	13,16%	9,38%
Total Assets	142,47	250,46	288,77	369,94	468,09
Shareholders' funds	79,03	136,49	156,23	189,46	180,13
Debtors	25,20	83,09	102,28	144,23	163,51
Current Liabilities	49,43	96,66	117,55	150,77	195,14
Return on Shareholders' Funds (ROSF)	11,81%	16,79%	28,20%	29,69%	12,77%
Return on Capital Employed (ROCE)	10,03%	14,90%	25,73%	25,67%	8,43%

REFERENCES

Alexopoulos, K (1999), "Future prospects for Greek construction group: identification and analysis of the business options", thesis, Bartlett School of Graduate Studies, University College London

Association of Greek Contracting Companies (2006), "List of Greek Contracting Companies registered in the Contracting Companies Register of the Ministry of Environment, Physical Planning and Public Works", June
(Σύνδεσμος Ανωνύμων Τεχνικών Εταιριών (2006), «Κατάλογος Ελληνικών Τεχνικών Εταιριών του Μητρώου Εργοληπτικών Επιχειρήσεων (Μ.Ε.ΕΠ.) του ΥΠΕΧΩΔΕ», Ιούνιος)

Brealey, R. A, S. C. Myers, F. Allen (2006), **Corporate Finance**, New York: McGraw-Hill

Carolidou, A (2006), "Themeliodomi: Interest from foreign investors", **Naftemporiki**, 9 August
(Καρολίδου, Α (2006), «Θεμελιοδομή: Ενδιαφέρον από επενδυτές εξωτερικού», **Ναυτεμπορική**, 9 Αυγούστου)

Construction Industry Council (1998), **Constructor's key guide to PFI**, London: Thomas Telford Publishing

Crosthwaite, D (1998), "The internationalisation of British construction companies 1990-96: an empirical analysis", **Construction Management and Economics**, Vol. 16, p. 389-395

Gruneberg, S. L and G. J. Ive (2000), **The economics of the modern construction firm**, Basingstoke: Macmillan

Hillebrandt, P. M (2000), **Economic Theory and the Construction Industry**, Basingstoke: Macmillan

Ive, G (1994), "A theory of ownership types applied to the construction majors", **Construction Management and Economics**, Vol. 12, p. 349-364

Ive, G (2005), CM01 Lecture Notes

Johnson, G, K. Scholes, R. Whittington (2005), **Exploring Corporate Strategy-Text and Cases**, Harlow: Financial Times/Prentice Hall

Karli, M (2005), "The management of Greek civil engineering contracting firms-approaches to market diversification", thesis, Bartlett School of Graduate Studies, University College London

Lappa, V (1998), "An overview of the Greek construction sector: a study of the growth-investment-finance trends in stock-market listed companies" thesis, Bartlett School of Graduate Studies, University College London

Mathioulaki, M (2002), "Future prospects for Greek construction group: identification and analysis of the business options", thesis, Bartlett School of Graduate Studies, University College London

Naoum, C. B (1994), **Introduction to Financial Accounting**, Athens
(Ναούμ, Χ. Β (1994), **Εισαγωγή στη Χρηματοικονομική Λογιστική**, Αθήνα)

Oppenheim, A. N (1992), **Questionnaire Design, Interviewing and Attitude Measurement**, London and New York: Cassel

Parker, R. H (1999), **Understanding Company Financial Statements**, England: Penguin

Santalo, J and M. Becerra (2005), "The dominance of diversified versus specialised firms and industries", **Journal of Business Research**, Vol. 59, p. 335-340

Soldatos, D (2002), **Public Works**, Thessaloniki: Dimopoulos Publishing (Σολδάτου, Δ (2002), **Δημόσια Έργα**, Θεσσαλονίκη: Εκδόσεις Ν. Δημόπουλου)

Sorensen, D. E (2000), "Characteristics of Merging Firms", **Journal of Economics and Business**, Vol. 52, p. 423-433

Thomson, N and P. McNamara (2001), "Achieving Post-Acquisition Success: The Role of Corporate Entrepreneurship", **Long Range Planning**, Vol. 34, p. 669-697